Unit 4: Cognitive Theories

4.1 Kohler's Insightful Learning

Cognitivism is the study in psychology that focuses on mental processes, including how people perceive, think, remember, learn, solve problems, and direct their attention to one stimulus rather than another. The psychologist following the cognitive theories are also grouped as Gestalt psychology The fundamental concepts of cognitivism involve how we think and gain knowledge. It involves examining learning, memory, problem solving skills, and intelligence.

One of the well known cognitive theories of learning is Gestalt theory. Gestalt theory was developed by a group of German psychologists.

- Max Wertheimer (father of Gestalt theory)
- Wolfgang Kohler, and
- Kurt Koffka
- Kurt Lewin

'Gestalt' is a German word which means ' whole' or total pattern. This school(knowledge group) believes that the 'whole' is more important than the parts. So learning also takes place as a whole'. One of the active member of the Gestalt group was Wolfgang Kohler. Based on the experiments, he developed a theory of learning which is called Insightful learning.

They expressed their dissatisfaction with the behaviourist approach of learning. They thought that '**learning is a more conscious effort of the individual rather than a mere product of habit formation or a machine-like stimulus-response connection**. According to them the learner does not only respond to a stimulus, but he or she mentally processes what he receives or perceives. So, **learning is a purposive, explorative and creative activity** instead of **trial and error**. According to them, things cannot be understood by the study of its component parts only, but actually it is understood only by perceiving it as a totality or whole.

Gestalt theory focused on the mind's understanding. The word 'Gestalt' has no direct translation in English, but refers to " placed, or put together"; Gestalt theorists followed the basic principle that the **whole is greater than the sum of its parts**. In other words, the whole (a picture, a car) carried a different and altogether greater meaning than its individual components.

Wolfgang Köhler (1887-1967) is one of German Gestalt psychologists. He is one of the founders of psychological school (a group) called Gestalt psychology. Other members of the group were Wertheimer, and Koffka.

Kohler's Experiments

Kohler conducted many experiments with his chimpanzee 'Sulthan' at island of Teniriffa in Africa '. These experiments are the illustration of Learning by Insight.

His studies, "The Mentality of Apes", were published in 1917. In this study, Köhler almost spent all his time on a group composed of nine monkeys. They were kept in a cage for the purpose of research.

In one experiment Köhler placed a banana outside the cage of a hungry chimpanzee, Sultan (the smartest ape). There were two bamboo sticks left inside. Sultan made many attempts to obtain the banana but it failed. It sat down in despair. But, after sometime it suddenly got up with **a sudden bright idea**. So, the chimpanzee tried to reach the banana by joining the two sticks Although left, Sultan accidentally joined the sticks, observed the result, and immediately ran with the longer tool to retrieve the banana. When the experiment was repeated, Sultan joined the two sticks and solved the problem immediately.

In another experiment the chimpanzee was shut up in a room with unsalable walls. A banana was hanging with the ceiling. The animal was hungry. He jumped at the fruit but it was too high. He left the efforts and sat down. There was a box lying in the corner of the room. The animal began to play with the box. **He then suddenly got up** and pushed the box to the centre of the room below the banana, jumped from it and got the fruit. The apes solved the problem of reaching the bananas hanging on the ceiling by means of putting boxes as a pile and climbing on this pile to get the bananas.

In another experiment Kohler made this problem a little more complicated that two or three boxes were required to reach the banana.

Insightful learning (अन्तरदृष्टि सिकाई)

From the experiments, Kohler found that chimpanzees could use **insight learning** instead of trial-and error to solve problems. The experiments demonstrated the role of **intelligence** and **cognitive abilities** in **higher learning** and **problem solving** situations. Based on his observations, Kohler concluded that apes (monkeys) did not carry out these missions through trial and error, but they used "introspection" and he explained the behaviour of apes' **problem solving** in terms of cognitive processes. According to Kohler, these animals can learn how to solve problem just like

humans. These behaviours of apes are carried out through a mental process. One of the most important contributions of Gestalt theory to education is the application **of introspective problem solving and productive thinking**.

According to Kohler, Learning by conditioning is common to all animals and human beings and useful for early education. But learning by insight is suitable only for **intelligent creatures both human and animals and useful for higher learning**. It is a kind of learning done by observation, by perceiving the relationship and understanding the situation.

When an individual or intelligent animal faces a problem, he thinks and looks over the whole situation and tries to find out solutions. He tries to get some clues to solve the problem, uses methods to follow and finds a general awareness of the results of his actions. Then suddenly, he arrives at a solution through his mental exercises. But for this, the total view of the situation should be exposed to the individual who must feel urgency of the problem and its solution.

Kohler said that insightful learning is a type of learning or problem solving that happens all-of-a-sudden through understanding the relationships of various parts of a problem rather than through trial and error. Insightful learning is also known as Gestalt learning which means that learning is concerned with the **whole individual** and arises from the interaction of an individual with his situations or environment. Through this interaction emerge new forms of perception, imagination and ideas which altogether constitute insight.

Characteristics of insightful learning

The common features of the experiments on insightful learning are as follows:

1. The nature of the experimental situation is very important for insightful learning. The organism must be able to perceive the relationships among all relevant parts of the problem before insight can occur.
2. The organism reacts to the whole situation, not to its component parts.
3. The organism perceives the relationships between means and the goal, and restructures the perceptual field.
4. Insight follows a period of trial and error behavior. In the trial-and-error period, the organism does not, however/exhibit blind and random attacks as shown by Thorndike's cat. On the other hand, it tests behavioral hypotheses in the form of accepting some and discarding others.
5. The insightful solution comes all on a sudden.

6. Once the insightful solution is reached, the organism shows high degree of retention and transfer to similar problems.
7. Insight is closely related to the organism's capacity to learn. The capacity for insightful learning depends on age, experience, and individual differences.
8. Understanding plays important role in insight learning.
9. Insight is related with higher order animals and not with inferior animals.
10. Age influences insight learning. Adults are better learner than children.
11. Past experience and perceptual organization is important in perception.

Educational Implications of (Insight learning) Gestalt Theory

1. **Problem Solving Approach:** This theory emphasizes that as the learner is able to solve problems by his insight, meaningful learning, learning by understanding, reasoning, etc. must be encouraged in the school.
2. **From Whole to Part:** The teacher should present the subject matter as a whole to facilitate insight learning.
3. **Integrated Approach:** While planning curriculum, gestalt principles should be given due consideration. A particular subject should not be treated as the mere collection of isolated facts. It should be closely integrated into a whole.
4. **Importance of Motivation:** the teacher should arouse the child's curiosity, interest and motivation. He should gain full attention of the whole class before teaching.
5. **Goal Orientation:** As learning is a purposeful and goal oriented task, the learner has to be well acquainted with these objectives. He should be fully familiar with the goals and purposes of every task.
6. **Emphasis on Understanding:** It has made learning an intelligent task requiring mental abilities than a stimulus – response association. So the learner must be given opportunities for using his mental abilities.
7. **Checking of Previous Experiences:** As insight depends upon the previous experiences of the learner, the teacher must check the previous experiences of the child and relate them with the new learning situation.
8. Student should be exposed to all elements of a problem in order to acquire introspective problem solving behaviour. The appropriate atmosphere should be prepared for the student to understand the nature of the problem, explore the relations between its elements and organize the possible ways of solution. For this purpose, curiosity of the student is moved.

9. According to Gestalt theorists, an individual perceives the whole as a meaningful and organized whole, not through separating the whole into parts. Then, he/she discovers the relations between parts and the whole. Moreover, relations of simplicity, similarity, proximity, and continuity, shape-base are important in perception. In this case, the teacher should give the basic framework of the lesson as an organized and meaningful whole to the students at the beginning of the term, and then should go into details. Thus, the teacher can help students to understand the function of the lesson and relations between the units as a whole.