THINKING
Definition

- Thinking or ideation is a complex mental activity consisting of development and manipulation of symbolic representation. It does not depend directly upon sensory or motor contact with the present environment.
Tools of Thinking

These include the following

- **Language Symbols**: These are vocal and written expressions used for intercommunication between human beings and for ideational activity.
- **Diagrams, Maps, and Musical Scores**
- **Concepts**
• Concept formation: Concept formation consists of 3 processes:
  - Generalization: is discovering common features in dissimilar objects.
  - Differentiation: is discovering different characteristics in similar objects.
  - Abstraction: is high order generalization.

• Combination of Concepts, principles, Rules, Laws, and Systems
Classification of Thinking
I-Classification According to Function

A. Imaginative Thinking: This is a type of mental manipulation, serving in itself, human satisfaction and pleasure. It consists of revival of past memories or recollection of past experience and their re-organization with or without control into a new pattern. It can be classified into two types:
1. Free Imagination: In which the individual does not direct or control his thinking but there is spontaneous free association of ideas leading to one another. This type occurs mainly in:
   A. Imaginative play of children
   B. Day Dreams of Adults
   C. Night Dreams
2. Controlled Imagination: Thinking here functions in a controlled way to reach certain goals. This type of imagination is mainly found in:

A. Artistic Productions: such as novel writing, painting, drawing, poem and musical production.
B. Invention:

1. Preparation Phase: in which the problem is examined and analyzed, tools of research are prepared and a hypothesis is proposed.

2. Incubation Phase: After data have been collected and scientific research came to an end with apparent solution to the problem which faces the researcher and work stops for a while.
3. **Inspiration Phase**: This phase may come early or late when the idea springs out of the blue in the mind of the scientist and the problem finds its solution.

4. **Verification Phase**: In which the new discovery e.g. a new drug is applied experimentally in laboratory animals and then on volunteers till it reaches its final and international acceptance and practical application. In this case the null hypothesis becomes a scientific fact.
(B) Purposive Thinking: This type of thinking is characteristic of our mental manipulation of daily events of life. It serves the purpose of solving problems and social adaptation. It includes:

1. Problem Solving: This is carried out by trial and error or insight thinking which consists of trying the solution on a mental level beforehand.

2. Logical or Rational Thinking: This thinking based on reasoning. It involves both hindsight and foresight and utilizes present observations.
II-Classification According to Emotional Factors
A. Biased Thinking: In this type individual’s thinking is influenced by his attitudes, emotions, and biases.

B. Objective Thinking: In this type the individual thinks about his problems by a critical attitude without the interference of his personal factors in judgment i.e. he takes the role of the judge in facing problems.
III-Classification According to Its Relation to Reality
A. Realistic Thinking: In this type the individual thinks in real problems and reaches realistic conclusions using facts and principles which are accepted by the society.

B. Idealistic Thinking: The individual thinks in what should be rather than in what is actually present. It depends upon using higher ethical and moral standard with philosophical orientation.
IV-Classification According to Consciousness
A. Conscious Thinking: In this type the individual is aware of what he is thinking about and can change deliberately the direction of his thoughts.

B. Unconscious Thinking: These are thought processes (ideas suggest other ideas in a sequence) carried beyond the individual’s awareness, occur automatically.
V-Classification According to Form
A. Abstract Thinking: This type of thinking depends on finding the significant relation or difference between objects or concepts after understanding their meaning.

B. Concrete Thinking: Concreteness means that the individual cannot reach proper conclusions through lack of understanding of meanings leading to false concept formation.
Physiology of Thinking

• Thinking is an integrative process including perception, speech, memory, learning, emotion, motives, intelligence, motor and visceral reactions
I-Disorders of Thinking
Disorders of Stream

1. **Acceleration**: with rapid associations and often resulting in flight of ideas as in manic illnesses.

2. **Retardation of thinking**: with difficulty of understanding and formulations as in depressive illnesses.
3. **Circumstantiality**: in which thought follows side branches with excessive details without losing the main subject discussed, in contrast to flight of ideas in which the patient’s talk does not reach its goal. Circumstantiality occurs in obsessive and hypomanic individuals.

4. **Disconnection or incoherence**: in which the thoughts are disconnected with no associational link. This occurs in schizophrenia and organic brain syndromes.
5. **Thought block**: in which the patient feels that his mind is empty and train of his thought is not continuous. This results in gaps in the speech of the patient with change of the subject’s talk. This is pathognomonic of schizophrenia.
II-Disorders of Content
1. **Preoccupation**: in which the mind of the individual is occupied all the time by certain thoughts that exclude other interests. This occurs when an individual loses one of his dear friends or passes through a love experience.

2. **Delusions**: are false beliefs, not true to fact, cannot be corrected by argument and are not in harmony with the patient’s culture, education or personality.
III-Disorders of Form
1. **Negative formal thought disorders**: in which the patient has no ability to form concepts, through lack of understanding e.g. the patient cannot explain proverbs i.e. his thinking is concrete. This typically occurs in schizophrenia, organic brain syndromes and mental retardation.
2. **Positive formal thought disorders:** in which false concept are formed to the extent that the thinking of the patient becomes vague with pseudo-philosophical and pseudo-religious trends. This disorder is characteristic of schizophrenia.
IV-Disorders of Control or Possession
The psychologically normal individual can control and direct his thinking. Disorders of control occurs in the following forms

1-Obsessive ideation and ruminations
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In which certain ideas repetitively Compel themselves on the mind of the patient with repeated unsuccessful trials on his part to get rid of them and his complete realization of their trifle and false nature. This type occurs in obsessive neurosis.
2-Thought alienation
A. **Thought broadcasting**: in which the patient feels that his thoughts are read by others or they are broadcasted by the radio or television.

B. **Thought insertion**: in which the patient feels that the thoughts are inserted into his mind against his will power and that those present are not his own.
C. **Thought withdrawal or deprivation**: The patient feels that his thoughts are drained away from his mind so that he can not think properly.

*Thought alienation* with its different forms occurs characteristically in schizophrenia, specifically the paranoid type.