

Faculty of Human and Social Sciences

Department of Psychology

Level: 2nd year LMD Psychology

Instructor: Ms. Saci Meriem

Module: English

Lesson n°2: Cognitive Psychology

Introduction:

Cognitive psychology is a branch of psychology that studies mental processes such as perception, memory, attention, problem-solving, decision-making, and language use. It focuses on understanding how the mind processes information and how these processes influence behavior.

1. Perception:

Perception is the process by which we interpret sensory information (from senses like sight, sound, touch) to form a mental understanding of the world. For example, when you see an image or hear a sound, your brain interprets this information to give you a clear idea of what's happening around you.

- **Visual Perception:** How we process visual information like colors, shapes, and distances.
- **Auditory Perception:** How we process sounds, such as environmental noises and words we hear.

Perception Theories:

- **Bottom-Up Processing:** It starts with raw data from the environment, building up to an understanding.
- **Top-Down Processing:** It relies on past experiences and expectations that shape how we interpret sensory input.

2. Memory:

Memory refers to the ability to store and retrieve information. There are different types of memory:

- **Sensory Memory:** Lasts for a few seconds and holds sensory information (like visual or auditory impressions).

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- **Short-Term Memory:** Stores information for a short period (seconds to minutes), like remembering a phone number temporarily.
- **Long-Term Memory:** Stores information for extended periods, possibly permanently, like remembering names or events from the past.

Memory Stages Theory:

- **Encoding:** The process of converting information into a format that can be stored in memory.
- **Storage:** The process of maintaining information in memory.
- **Retrieval:** The process of recalling stored information when needed.

3. Attention:

Attention is the ability to focus on a specific task or input while ignoring others. There are different types of attention:

- **Selective Attention:** Focusing on one thing while ignoring others.
- **Divided Attention:** The ability to pay attention to more than one thing at a time (multitasking).

Attention plays a crucial role in other cognitive processes like memory and problem-solving.

4. Problem-Solving:

Problem-solving is a mental process involving the organization of thoughts to solve challenges. It includes several stages:

- **Identification:** Recognizing what the problem is.
- **Planning:** Developing strategies to solve the problem.
- **Implementation:** Applying the solutions.
- **Evaluation:** Assessing the effectiveness of the solution.

Problem-Solving Strategies:

- **Analytical Thinking:** Breaking down the problem into smaller parts to understand it.

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- **Creative Thinking:** Looking for novel and unconventional solutions.

5. Decision-Making:

Decision-making is the process of choosing the best option among several alternatives based on available information. It's influenced by several factors like emotions, past experiences, and personal perceptions.

Decision-Making Theories:

- **Rational Model:** Suggests that people make decisions by logically evaluating all options based on data.
- **Intuitive Model:** Suggests that people sometimes make decisions based on intuition or "gut feelings" without detailed analysis.

6. Language:

Language is a system of communication, and cognitive psychology studies how the brain processes language.

Key Areas in Language Studies:

- **Language Acquisition:** How children learn language.
- **Language Production:** How we form sentences and use words.
- **Language Comprehension:** How we understand words, sentences, and concepts.

Language Acquisition Theories:

- **Social Interactionist Theory:** Suggests that children learn language through social interaction.
- **Biological Theory:** Suggests humans are biologically predisposed to acquire language (e.g., "Broca's area" and "Wernicke's area" in the brain).

7. Cognitive Development:

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Cognitive development refers to how mental abilities evolve over the lifespan, from childhood to adulthood. One prominent figure in this field is **Jean Piaget**, who proposed a theory of cognitive development with four main stages:

- **Sensorimotor Stage:** From birth to 2 years, children understand the world through sensory experiences and motor actions.
- **Preoperational Stage:** From 2 to 7 years, children begin to use symbols and language.
- **Concrete Operational Stage:** From 7 to 11 years, children can think logically about concrete objects.
- **Formal Operational Stage:** From 12 years onward, adolescents can think abstractly and logically.

8. Applications of Cognitive Psychology:

- **Education:** Cognitive psychology helps develop educational strategies that enhance learning and memory.
- **Human-Computer Interaction:** Cognitive principles are used to improve the interaction between humans and technology.
- **Psychotherapy:** Cognitive-behavioral therapy (CBT) is one application of cognitive psychology used to treat various psychological disorders.

9. Testing and Experimentation in Cognitive Psychology:

Researchers use various experimental methods to study cognitive processes, such as:

- **Laboratory Experiments:** Controlled experiments designed to measure the effects of different factors on cognitive processes.
- **Neuroimaging:** Techniques like MRI are used to observe how the brain processes information.