

14-03-2024

Thursday

Lecture # 12

* CHAPTER: COGNITION & LANGUAGE

→ Cognition : mental process of thinking or acquiring knowledge and understanding through thoughts, experiences and senses.

example: thinking, decision-making, problem solving, judging

→ Cognitive Psychology : branch which focusses on higher mental process including thinking, decision-making and problem-solving etc.

→ Thinking : the ability to process information, store and retrieve memories, hold attention and select appropriate actions.

→ Mental image : the representations of in the mind of an object or an event

example: daydreaming

→ Language : the mode of communication of information through symbols assembled by arranged according to systematic rules

↓
grammatical rules

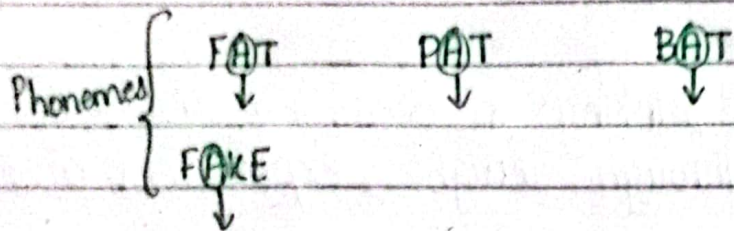
→ Language's language :

↳ Grammar : the system of rules that determine our thoughts and actions

→ Components of Language :

→ related to sound

- 1) Phonology : Phonemes → smallest unit of speech
↳ constructs our sentences



- 2) Morphology : Morphemes → smallest unit of language

examples : small

↓
small^{est} → morpheme

- 3) SYNTAX : ~~order~~ ways in which words and phrases can be combined to form sentences.

example : subject, object placement

I RAN TO THE STORE ✓
STORE RAN I ✗

- 4) SEMANTICS : study of meaning that is used to understand human expression through language
example : boy and males ~~go~~ are similar but not semantically similar

→ ~~CONCEPT~~ CONCEPT : mental grouping of similar events, objects or people

→ REASONING : A purposeful mental activity that involves operating on information to reach the conclusion

↳ i) Inductive reasoning - progression from specific to general

↳ ii) Deductive reasoning - a logical approach where you progress from general to specific

e.g., $A=B=C \rightarrow \text{so } A=C$

→ PROBLEM-SOLVING : Active effort people make to ^{achieve} reach a goal that cannot be easily achieved.

⇒ Different steps of PROBLEM-SOLVING:

↳ Identifying a problem

↳ ~~For~~ Determining the cause of a problem

↳ Devising a strategy / plan of action

↳ Selecting alternatives for a solution (most appropriate one)

↳ Executing the strategy

↳ Evaluating the progress

⇒ Different types of Problem-solving:

1) INDUCING ↔ STRUCTURE : e.g., Series completion and analogy problems

↳ involves identifying the relationships among the elements of a problem

↳ main objective is to understand the underlying pattern

2) ARRANGEMENT: examples include anagrams and the string problem

↳ goal is to arrange or organize the given elements in a specific order or pattern

↳

↳ main challenge is to find the correct sequence or arrangement that satisfies the given conditions.

3) TRANSFORMATION: examples include the water jar problem + hobbits & orcs problem

↳ involves changing the initial state or condition of the problem to reach the desired state or solution

↳ understanding the process or steps required to transform the initial solution into the final solution

intuition judgement emotions

19-03-2024

Tuesday

Lecture # 13

* STRATEGIES OF PROBLEM SOLVING:

a) Algorithms : ↳ step by step procedure followed to produce a solution

e.g., ~~in~~ tying your shoes
brushing your teeth

b) Heuristic : ↳ rule of thumb
↳ mental shortcuts that allow people to solve problems or make judgements

e.g., choosing between 2 different brands when ^{shopping} grocery
taking an umbrella or jacket if the weather is cloudy

* DECISION MAKING :

↳ cognitive / mental process used to choose ^{the most appropriate one} between ~~an~~ two or more alternatives (by reasoning)

i) Rational Decision Making : ↳ all available alternatives are taken into account and the most appropriate one is chosen through reasoning

ii) Irrational Decision Making : ↳ decisions made through intuition, judgement and emotions

Divergent thinking
Convergent thinking

* CREATIVE THINKING:

- ↳ thinking out of the box
- ↳ brings innovativity, creativity
- ↳ mental process involved to find a possible, different solution to a problem

/Steps

⇒ Stages of Creative Thinking

- Preparation :-
 - ↳ identify, understand and analyse the problem
 - ↳ involves brainstorming, reasoning
- Incubation :-
 - ↳ taking a break from actively thinking about the problem
 - ↳ the subconscious mind continues to work on the problem
- Illumination :-
 - ↳ sudden emergence of creative step a solution
- Verification :-
 - ↳ Assessing, evaluating, refining and testing the creative solution

* INTELLIGENCE capacity

- ↳ the ~~ability~~ to understand the world, think rationally and use reasoning effectively when faced with challenges.

$$\Rightarrow \text{Intelligence Quotient} = \frac{\text{Mental Age}}{\text{Chronological Age}} \times 100$$

↳ intellectual age
↳ Biological age

* EMOTIONAL INTELLIGENCE

↳ the ability to perceive, interpret, demonstrate, control, evaluate and use emotions to communicate with and relate to others effectively and constructively

↳ regulate emotions → make good decisions

* example: In order to convince a teacher to postpone the quiz
(door in the face) or ~~(face in the door)~~

⇒ Measured using Emotional ~~Q~~ Intelligence Quotient (EQ)

↳ is significant