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 ~~pro~~ 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~~ and actions

↳ **Components of Language** :

1) **Phonology** : Phonemes → smallest unit of speech
   ↳ related to sound
   ↳ constructs our sentences

Phonemes { FAT PAT BAT
           FAKE

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 : 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 → so A = C

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

⇒ Different steps of PROBLEM-SOLVING :

↳ Identifying a problem
↳ Determing 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 :

i) 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., 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 grocery shopping
taking an umbrella or jacket if the weather is cloudy

* DECISION MAKING :

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

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 intuitions, 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

i) Preparation :- ↳ ~~under~~ identify, understand and analyse the problem
↳ involves brainstorming, reasoning

ii) Incubation :- ↳ taking a break from actively thinking about the problem
↳ the subconscious mind continues to work on the problem

iii) Illumination :- ↳ sudden emergence of ~~creative step~~ a solution

iv) 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.

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

Mental Age → intellectual age
Chronological 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 Intelligence Quotient (EQ)

↳ is significant