

Lab →

- Empathy maps (IBM)
- Stakeholder map

Tool:- Blueworkslive

Books →

- ① E Balaguruswamy
- ② Design Thinking: A forefront Insight
1st Edition, Kaushik Kumar,
Muralidhar Kurni, CRC press (2022)

Resources:-

- 1) interaction-design.org

Unit I: An Insight to Learning
Understanding the Learning process:
Kolb's Learning Styles, Assessing
and interpreting, Remembering
memory - Understanding the
Memory process, Problems in retention
Memory enhancement techniques.

→ An ^{insight} Insight to learning is the
sudden realization of a solⁿ to
a problem. It is the result of

Seeing the conn. b/w variables in a situation
Examples:- that were not recognized
previously

- ① Not being able to generate a
design solⁿ for several days and then
realizing the solⁿ while on a
walk through the woods.
- ② Not knowing which of 2 jobs
offers to accept until a firm
says something that makes the
best option crystal clear.
- ③ Working on the budget for a
demanding project and then
suddenly figure out several
ways to be more cost effective.
- ④ Team members going through

a frustrating brainstorming session until finally someone says something that is wrong, but sparks another idea that will work.

Features :-

- ① Impasse :- The solⁿ emerges after an impasse of failed attempts.
- ② Restructuring :- the solⁿ involves novel restructuring of the problem.
- ③ A-ha Moment :- the solⁿ appears suddenly.

Learning :- is the process of acquiring;

- new knowledge and intellectual skills (Cognitive learning)
eg To Recall, collect, calculate, discuss, analyze
 - New manual or physical skills (Psychomotor learning)
eg - To dance, swim, drive, etc.
 - New emotional responses, attitudes, and values (Affective learning)
eg - appreciate fear, hate, love, worship.
- * Another Defⁿ :- A process of behaviour modification through experiences, exercise and efforts.

Understanding the Learning Process :-

Human born with Instinctive Behaviour

Acquire various habits, knowledge, attitudes, and skills etc.

The acquisition of all these things is called "Learning"

(24/08)

EXTRA →

Behaviors Not Attributable to Learning :-

* Reflex Actions :- Behaviours which are instant and we even do not feel that we are putting in any special effort.

eg - Pin pricks our finger.
bright light falls on our eyes.

* Biological Instincts :- Behav. which is natural and not learned.
eg - a child start crying when s/he feels hungry.
→ we feel like resting when tired.

* Sometimes, Modification or change in behaviour takes place due to accidents or psychological defects

↑ [Not Considered under "learned Behaviour"]

Similarly, Some motor actions which a child can perform only at a certain age.

↑ Behav. which is the outcome of maturity of the child, is not called learned Behaviour.

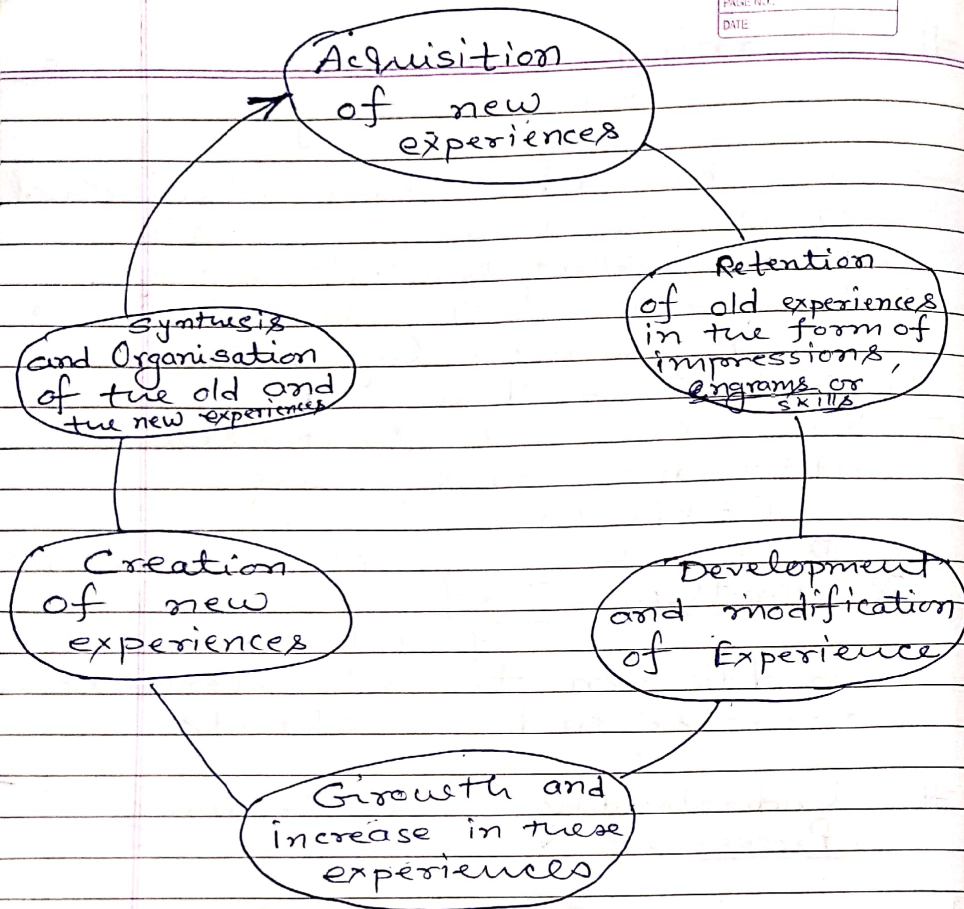


Fig → The Learning Process

Conclusion :-

→ It can be concluded that learning is a process by which an individual, as a result of interactions in a situation, modifies his/her behaviour.

Note
engram :- is a memory trace in the brain that can be extracted when the memory is reactivated.

Dimensions of Learning :-

- ① Attitudes and Perceptions
- ② Acquire and Integrate knowledge
- ③ Extend and Refine knowledge
- ④ Use knowledge meaningfully
- ⑤ Habits of Mind

Learning Styles :- The term 'Learning Styles' corresponds to the understanding that every individual learns differently.

→ LS define the way how people learn and how they approach information.

→ It is a pattern of behaviour that human beings use for new learning.

★ Different learners learn in a variety of ways,

- by seeing and hearing
- working alone or in groups
- reasoning logically and intuitively
- Memorizing or Visualizing.

Kolb's Learning Styles and Experimental Learning Cycle:-

→ David Kolb published his learning style in 1984, from which he developed his learning style inventory.

→ Kolb's experimental learning theory works on two levels:

- ① a four-stage cycle of learning
- ② Four separate learning styles

→ Much of Kolb's theory is concerned with the learner's internal cognitive processes.

→ Kolb states that learning involves the acquisition of abstract concepts that can be applied flexibly in a range of situations.

example
Emotions
Abstract
actions
like
thinking

→ In Kolb's theory, the impetus for the development of new concepts is provided by new experiences.

★ Def →

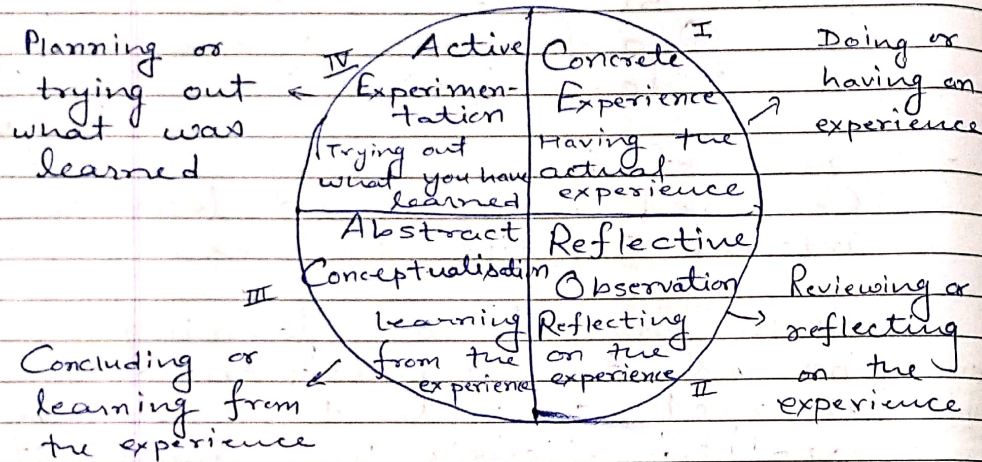
"Learning is the process whereby knowledge is created through the transformation of experience."

Note → Cognitive Pro → the mental ops the brain performs to process information.

संज्ञान
पुस्तक

Kolb's Four Stages of Learning

★ The Experimental Learning Cycle :-
Kolb's experimental learning style theory is typically represented by a four-stage learning cycle in which the learner "touches all the bases".



1. Concrete Experience :- the learner encounters a concrete experience.

This might be a new experience or situation, or a reinterpretation of existing experience in the light of new concepts.

★ learner engaged in an activity.

2. Reflective Observation of the New Experience :- the learner

Ref: Simplypsychology.org

reflects on the new experience in the light of their existing knowledge.

Of particular importance are any inconsistencies b/w experience and understanding.

★ Ask qs and discuss exp. with others.

3. Abstract Conceptualization:-

Reflection gives rise to a new idea, or a modification of an existing concept (the person has learned from their experience).

★ Attempts to draw conclusions old idea
new info

4. Active Experimentation:- the newly created or modified concepts give rise to experimentation.

The learner applies their idea(s) to the world around them to see what happens.

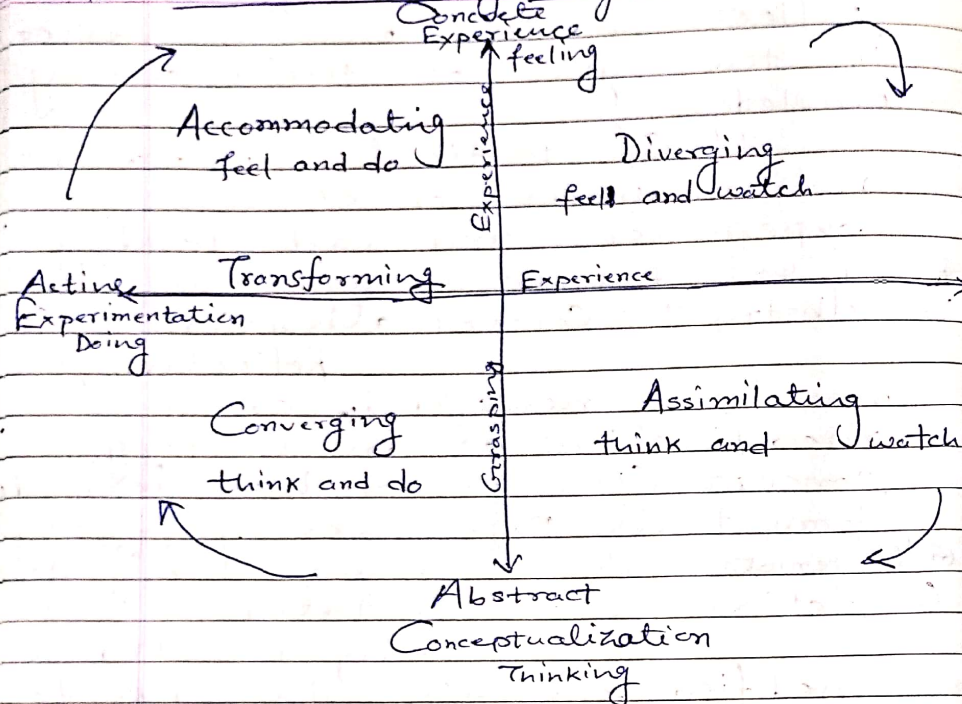
feeding into the next

→ Each stage is mutually supporting &

→ It is possible to enter the cycle at any stage and follow it through its logical sequence

Refer →
educationaltechnology.net

Kolb's Learning Style:-



① Diverging (Concrete experience / Reflective Observation)

→ This learning style takes an original and creative approach

Diverger Prefer:

→ Hand-on activities and opportunity to explore.

→

② Assimilating (Abstract Conceptualization / Reflective Observation):-

→ emphasises reasoning.

→ Individuals who demonstrate this learning style are able to review the facts and assess the exp. as a whole.

→ They tend to enjoy designing experiments and working on projects from start to completion.

Assimilators prefer:

→ Independent, prepared exercises that the learner can complete without the instructor.

③ Converging (Abstract Conceptualization / Active Experimentation)

→ This learning style highlights problem solving as an approach to learning.

→ Individuals who prefer this

learning style are able to make decisions and apply their ideas to new experiences.

→ Unlike Divergers, they tend to avoid people and perceptions, choosing instead to find technical solutions.

Instructional techniques

Convergers prefer:

- workbooks or worksheets that provide problems sets.
- Tasks that are computer based.
- Interactive activities.

④ Accommodating :-

(Concrete Experience/Active Experimentation)

- This learning style is adaptable and intuitive.
- These individuals use trial and error to guide their experiences, preferring to discover the answers for themselves.
- They are able to alter their path based on the circumstance and generally

have good people skills.

Accommodators prefer:-

- Activities that allow them to be actively engaged.
- Exploration and instructor support for deeper questioning, such as "what if?" or "why not?"
- Tasks that promote independent discovery.

Understanding the Memory Process

- Memory is the processes that is used to acquire, retain and later retrieve information.
- The memory process involves three domains:

① Encoding :- Processing incoming info so it can be entered into memory.

② Storage :- maintaining info. in memory for a period of time.

③ Retrieval :- Accessing or recalling stored info from memory so it can be used.

① Encoding :-

• New memory

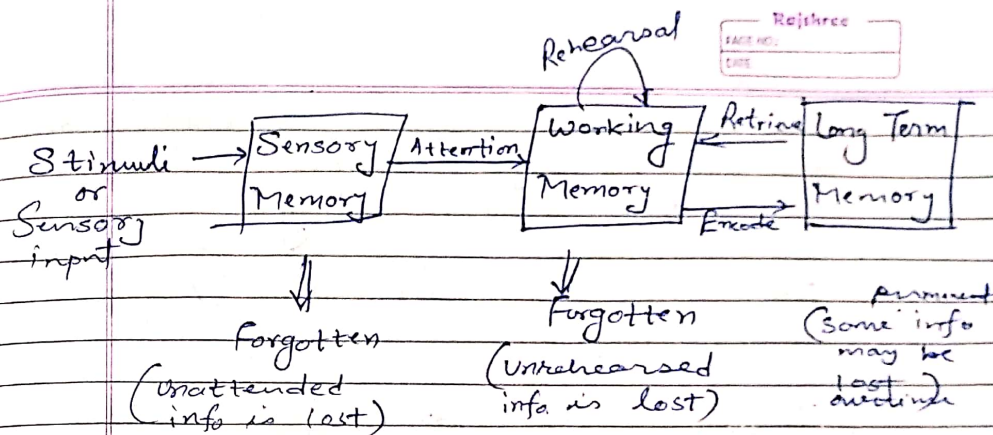
information → Usable form

eg: Classification of Books in Library

Memory Process :-
Stages :-

Encoding ⇒ Storage ⇒ Retrieval

- ① → Encoding requires :- eg: To remember or pay attention on something (Mob. No. list of items to purchase etc).
- Effortful Processing



- ② Storage :- It is believed that we can gather information in three main storage areas:
- Sensory memory
 - Short-term memory
 - Long-term memory

Three types of encoding :-

- ① Visual (picture) :- info is represented as a picture.
- ② Acoustic encoding :- (sound) info is represented as sounds.
- ③ Semantic encoding :- (meaning) info is represented by its meaning to you.

we see

eg:- a Telephone number written on a piece of paper
(Visual encoding)

If we say number (Acoustic encoding)

Digits written and you notice special sequence (representing eg a special date) you give meaning to number and thus semantically encoding.

← (i) Sensory Memory:- stores incoming sensory information in detail, but only for a fraction of a second.

→ Capacity is large, but the info. in it is unprocessed.

(ii) Short term memory:- Some of the info in sensory memory transfers to short-term memory.

→ Short term memory can hold info. for approximately 30-45 secs.

→ Rehearsing the info can help keep it in short-term memory longer.

eg- If we repeat a person's phone no. over & over to ourself

→ Has a limited capacity

(iii) Long term Memory:- has an almost unlimited storage capacity.

→ Info. that makes it into long-term memory can remain there for entire life.

→ However, it is possible we are not able to retrieve it.
[The way we store it affects the way we retrieve it.]

(3) Retrieval:- is the process of recalling stored info. from memory. Basically, it is getting information out of our long-term memory and returning it to our conscious mind.

There are two main methods of retrieving memories:

→ (a) Recognition (b) Recall

(a) Recognition:- is the association of something with something previously experienced.

→ It involves comparing new info. with info. stored in memory.

eg → In a party/func, we see a person and recognize from a prior experience.

(b) Recall:- is the retrieval of information from memory without a cue (सूचना)

→ It involves remembering a fact, event or other information that is not currently physically present.

eg → If a person asks a question, we must search in our memory to recall the answer.

• We may have to recall the list of items of our shopping list.

Ref → thepeakperformancecenter.com

3rd

Problems in Retention:-

(Refer: Proprofstraining.com)

→ Learning Retention is a key identifier of learning success. Without it learners will remain unable to apply knowledge.

→ A failure to retain info. longer term is known as the forgetting curve.

⊗ Factors that impact Retention in Learning:-

① Interest & Motivation:-

→ Human brain has been hardwired to focus on and remember things that it finds interesting.

② Repetition:- The more you repeat or practice a task, the better you retain it in your memory.

eg - IT stick and we refer it

③ Association:- The ability of learners to associate learning content with real life and find meaning in them also helps them retain info. longer.

eg - when we form a mental picture of

how we'll be able to work better after learning a new skill, it facilitates better learning, retention and recall.

④ Multiple Channels:- Diff learners prefer diff. learning styles.

Memory Retention:- refers to the ability to remember information over a period of time.

OR In short, it is the process of retrieving information after it has been encoded and stored.

Forgetting → Occasionally, our retention may decay, and our stored memory is lost as time goes on.

This event is also known as forgetting.

error → When we forget things, there is an error in the retrieval process that causes memory to be reconstructed.

EF-curve
→

According to Hermann Ebbinghaus, our memory retention is characterized by the "Ebbinghaus Forgetting curve", which illustrates the rate at which we forget something after it is learned.

→ Based on the curve information is initially forgotten very quickly, but ~~and~~ the rate of memory loss slows down as time goes on.

Memory Enhancement Techniques:-

① Practice Retrieval:-

Tips - Use flashcards, go through them multiple times
- Quiz yourself or ask a study partner.

② Use Mnemonic Devices:-

Ex → Songs, Acronyms, chunking

- Chunking:- is taking longer forms of information and breaking them down into smaller, manageable groups or chunks that can then be memorized easier.

Building
- Memory palace - a Mnemonic device that associates information to

Youtube: Joshua Foer
"Feeds of Memory anyone can do"

be remembered with familiar locations or landmarks.

③ Take Adv. of Technology:-

- Use tools (available online)

④ Keep lists (To-Do-List)

⑤ Spread Out your study sessions:-

- Spaced Repetition

⑥ Don't forget the forgetting curve.

⑦ Use Elaborative Rehearsal.