## SEMESTER-2

## PERSPECTIVE IN EDUCATION COURSE (PEC-5)

# LEARNING PROCESS AND MEASUREMENT


**By**

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# UNIT II: FACTORS INFLUENCING LEARNING

a. Motivation – Meaning, Types – Measures to Motivate Children

b. Memory – Meaning, Short Term Memory and Long Term Memory, Factors influencing memory – Methods of memorisation.

c. Forgetting – Concept, Causes, Types, Forgetting Curve,

d. Transfer of Learning – Concept, Types, Theories (brief), and measures to maximize the transfer.

e. Information processing theory – Atkinson – Schifrin, Robert Gagnes Models. Approaches Behaviouristic Views, Cognitivist Views

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# UNIT II: FACTORS INFLUENCING LEARNING

b. Memory - Meaning, Short Term Memory and

-Long Term Memory,

-Factors influencing memory

-Methods of memorisation.

- **MEMORY**

  Memory plays an important part in our daily life. For effective learning it is essential that we should be able to preserve our past experiences and the outcomes of learning and make use of them whenever needed.

- This process of retaining and reproducing what has been learnt is known as remembering.

- The power of the mind to retain and reproduce is called memory.

- The term “Memory” is derived from the Latin word 'Memoria', which means long remembrance or historical account.

- In psychology memory is considered a mental process, which provides the basis for all cognitive processes, such as problem solving, logical thinking, imagination and decision making.

- Memory is a mental power which consists in learning, retaining and remembering what has previously been learnt. --Woodworth and Marquis

- “ಹಿಂದೆ ಕಲಿತಂತಹ ವಿಷಯಗಳನ್ನು ಅಥವಾ ಅನುಭವಗಳನ್ನು ಪುನಃಸ್ಮರಣೆಗೆ ತರುವುದೇ ಸ್ಮೃತಿ". ವುಡ್‌ವರ್ತ್ ಮತ್ತು ಮಾರ್ಕ್ವಿಸ್,

The power that we have to store our experiences, and to bring them into the field of consciousness sometime after the experiences have occurred, is termed memory. – Ryburn

“ನಾವು ಪಡೆದ ಅನುಭವಗಳನ್ನು ಸಂಗ್ರಹಿಸಿಡುವ ಶಕ್ತಿ ಮತ್ತು ಅನುಭವಗಳು ಜರುಗಿದ ಸ್ವಲ್ಪ ಕಾಲಾನಂತರ ಪ್ರಜ್ಞಾನುಭವಕ್ಕೆ ತಂದುಕೊಳ್ಳುವ ಸಾಮರ್ಥ್ಯವೇ ಸ್ಮೃತಿ“. --ರೈಬರ್ನ್.

- Memory consists of three separate but interrelated components, i.e.,

1. Encoding of sensory input or stimulus information,
2. Storage or retention of the encoded, and
3. Retrieval of information whenever required.

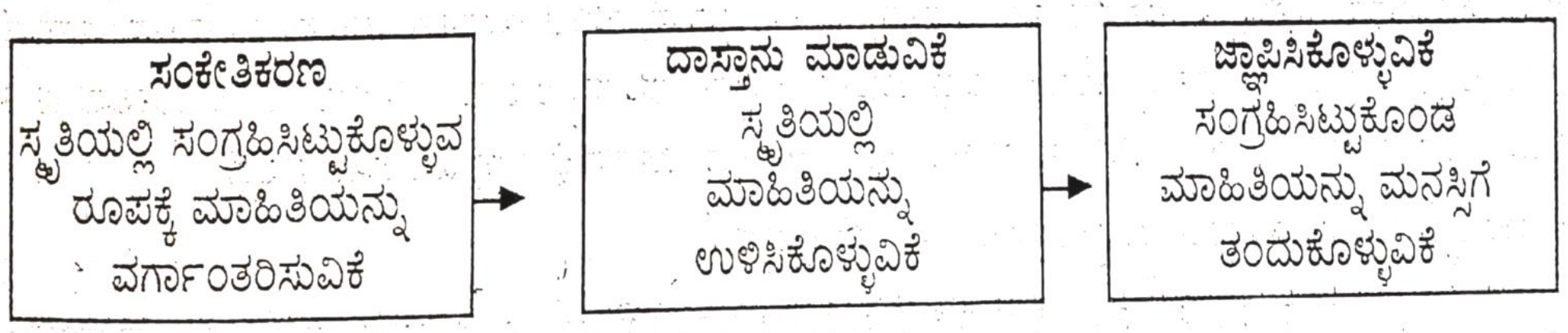
✦ ಸಂಕೇತಿಕರಣ (Encoding) – ಪಡೆದುಕೊಂಡ ಮಾಹಿತಿಯನ್ನು ಸ್ಮೃತಿಯಲ್ಲಿ ಸಂಗ್ರಹಿಸಿಟ್ಟುಕೊಳ್ಳುವ ರೂಪಕ್ಕೆ ವರ್ಗಾಂತರಿಸುತ್ತದೆ.

✦ ದಾಸ್ತಾನು ಮಾಡುವಿಕೆ (Storage) – ಸ್ಮೃತಿಯಲ್ಲಿ ಮಾಹಿತಿಯನ್ನು ಸಂಗ್ರಹಿಸಿಟ್ಟುಕೊಳ್ಳುವಿಕೆಯನ್ನು ಒಳಗೊಳ್ಳುತ್ತದೆ.

✦ ಜ್ಞಾಪಿಸಿಕೊಳ್ಳುವಿಕೆ (Retrieval) – ಸ್ಮೃತಿಯಲ್ಲಿ ಸಂಗ್ರಹಿಸಿಟ್ಟುಕೊಂಡಿರುವ ಮಾಹಿತಿಯನ್ನು ಬಳಸಿಕೊಳ್ಳಲು ಮನಸ್ಸಿಗೆ ತಂದುಕೊಳ್ಳುವ ಪ್ರಕ್ರಿಯೆ.

ಪ್ರಸ್ತುತ ಮಾಹಿತಿಯನ್ನು ನಂತರದ ಉಪಯೋಗಕ್ಕಾಗಿ ಸಂಗ್ರಹಿಸಿಟ್ಟುಕೊಳ್ಳುವ ಜ್ಞಾನಾತ್ಮಕ ಪ್ರಕ್ರಿಯೆಯ ಈ ಕೆಳಗಿನ ಮೂರು ಪ್ರಕ್ರಿಯೆಗಳ ಯಶಸ್ವಿ ಪೂರ್ಣಗೊಳ್ಳುವಿಕೆಯನ್ನು ಒಳಗೊಳ್ಳುತ್ತದೆ. ಅವುಗಳೆಂದರೆ –

- ಸಂಕೇತಿಕರಣ (Encoding) – ಪಡೆದುಕೊಂಡ ಮಾಹಿತಿಯನ್ನು ಸ್ಮೃತಿಯಲ್ಲಿ ಸಂಗ್ರಹಿಸಿಟ್ಟುಕೊಳ್ಳುವ ರೂಪಕ್ಕೆ ವರ್ಗಾಂತರಿಸುತ್ತದೆ.
- ದಾಸ್ತಾನು ಮಾಡುವಿಕೆ (Storage) – ಸ್ಮೃತಿಯಲ್ಲಿ ಮಾಹಿತಿಯನ್ನು ಸಂಗ್ರಹಿಸಿಟ್ಟುಕೊಳ್ಳುವಿಕೆಯನ್ನು ಒಳಗೊಳ್ಳುತ್ತದೆ.
- ಜ್ಞಾಪಿಸಿಕೊಳ್ಳುವಿಕೆ (Retrieval) – ಸ್ಮೃತಿಯಲ್ಲಿ ಸಂಗ್ರಹಿಸಿಟ್ಟುಕೊಂಡಿರುವ ಮಾಹಿತಿಯನ್ನು ಬಳಸಿಕೊಳ್ಳಲು ಮನಸ್ಸಿಗೆ ತಂದುಕೊಳ್ಳುವ ಪ್ರಕ್ರಿಯೆ.



- 1-Encoding: It is the first stage of memory. In this stage sensory information or the physical stimuli received from environment are received and transformed into neural impulses that can be processed further or stored for later use / *It's the way of transforming the information in the storable form.*
- Thus encoding can be considered as the active process of representing or putting information into memory

2-Storage : This represents the second stage of memory.

- If the encoded information has to be retained for longer time or to be used more than once, it has to be stored in some way in the memory system.
- Some bits of information, which are used only once, are stored for a short period of time and then discarded.
- Storage is holding the encoded information in memory system for later use.

3-Retrieval : This stands for the third stage of memory. It refers to drawing out needed information from the memory store.

- In other words it is recovering information from storage in memory, It may involve recall or recognition.
- Recognizing and also recalling the names of old friends.
- This recognition and recall is possible because you had learned to associate their names and physical appearances, and you could store that in your memory and now you able to retrieve the information.

***Signs of Good Memory :***

Psychologists have identified the five signs of good memory

1) Rapidity : **(ಕ್ಷಿಪ್ರಗತಿ)** It means how rapidly the learner recalls his past experiences. If one recalls rapidly, it means he possesses a good memory.

2) Accuracy: **(**ನಿಖರತೆ**)** The second sign of good memory is the accuracy of the facts and experiences recalled.

3) Length of time : **(**ಧಾರಣೆಯ ಕಾಲ **)**How long one can retain the past experiences and recall them is also a sign of good memory.

4) Promptness : **(**ಚುರುಕುತನ -ಶೀಘ್ರತೆ**)** It refers revival of the details of past experiences.

5) Serviceableness: **(**ಉಪಯುಕ್ತತೆ **)** It refers to the recall of the right thing at the right time and place.

# (b)-Memory

- Sensory Memory
- Short Term Memory
- Long Term Memory
- Factors  influencing memory
- Methods of memorisation

# Three Systems Of Memory

1-Sensory Memory, 2-Short Term Memory & 3-Longterm Memory

## 1-Sensory Memory

- Sensory memory is the first stage of memory, which holds an explicit and literal record of incoming information for a few seconds or less.
- However, many researches have concentrated on visual (ionic) and auditory (echoic) memories only

- Sensory memory is the storage of information that we receive from our senses.
- Examples of Sensory memory include seeing a dog, feeling gum under a chair, or smelling chicken noodle soup. Our eyes, nose, and nerves send that information to the brain.

- It is generally accepted that there are as many sensory memories or registers, as are sensory receptors, such as, visual, auditory, tactile, olfactory and gustatory receptors.

Some Experiments conformed that,

- Visual (ionic)sensory information will remain for one second or less than that.
- Auditory(echoic) sensory information will remain for about 4 to 5 seconds.
- Visual sensory memory can hold at least 11 to 16 items of information during the second before it loses the information.

## 2-Short Term Memory:

- Short term memory is known as working memory.
- It holds information received from sensory memory for a short period of time and makes further processing.
- It is an active system, which constantly handles, combines and transforms materials drawn from both sensory memory and long-term memory.
- STM has limited capacity to retain or hold information for digits, letters, words or names at a time.

- Examples of short term memory include
- Where you parked your car this morning,
- What you had for lunch yesterday,
- Remembering details from a book that you read a few days ago

- On the whole it can hold seven units (or chunks) of information or items, plus or minus two.
- It means that the span of our STM can normally vary between 5 and 9 items.
- Some persons can hold 5 items while others can hold 6, 7, 8 or 9 items and most of us can hold 7 items at a time.

- The items may be digits, letters, numbers, names or other discrete items.
- Sometimes smaller units can be chunked in larger units, such as digits into numbers and letters, letters into words, and words into categories
- It has been estimated that STM or working memory can hold information in it for not more than 18 seconds unless the material is rehearsed.
- This kind of rehearsal is called maintenance rehearsal

# 3-Long term memory:

- Long term memory is that part of memory in which information is retained for very long period of time.
- Once information is stored there, it may persist throughout one's life.
- It has been found that certain information we learnt during high school is available for retrieval even after fifty years.
- It is also true that with passage of time a lot of information stored in LTM decays and is not available for retrieval, especially for recall. Whatever is recalled is not always accurate

- Some of the stored information gets altered, shortened, and additions may be made to it at the time of recall.

- The storage capacity of LTM for all practical purposes is infinite.

- We can remember names of innumerable persons, indeed, a complete list of all kinds of information a person maintains in his LTM would be almost infinite.
- The LTM stores most of our factual knowledge about the world. Such facts make up a part of LTM known as semantic memory.
- Thus, stored items are meaningful and always refer to specific persons, events, facts and features etc.

## Factors influencing memory:

- Most of the factors considered important in learning are also important for memory. There are some additional important factors influencing memory.
- Individual differences: Most intelligent learners usually possess better remembering ability than less intelligent learners. Quick learners retain more than slow learners.

- Type of material involved - Meaningful material is retained with little difficulty.
- Pleasantly toned material is generally retained slightly better than unpleasantly toned material.
- Interest: Interest in the learning material results in better retention and pleasant experiences will be retained for a longer period.

- For eg : Some pupils do not remember the names of the members of the union cabinet and they remember the names of the members of the Indian cricket team.

- This is because of the fact that pupils are more interested in the game of cricket than in the governance of our country.

- Motivation : Learning with a strong desire to remember result in greater retention than mere learning to learn.
- Learner's attitude: A favourable attitude towards learning activity and learning material will have a positive effect on retention.
- Intensity: The intensity of the stimulus assists in the retention of a subject. Weak or distinct stimuli do not stick in the mind for any length of time.

- Distinctness: Distinct stimuli like strong light, bright colour, etc can be retained for a long time, we forget an ordinary person easily but we remember an extraordinary person for a long time.
- Recency: Recent experiences are retained for a longer time and a diminution in their retention occurs with the passage of time.
- Meaningfulness: meaningful experiences will be retained for a longer time with little effort.

- Duration: A stimulus which continues for a *long-time can be retained for a long time in the mind*. A stimulus of a *shorter duration will be retained for a shorter duration.*
- Amount of learning: The extent of retention is directly proportional to the amount of learning, that is to say that retention will be more if the amount of learning is large, Overlearning has a favourable effect on retention
- Attention: If greater attention is paid while studying a subject the retention will be better. On the contrary, the retention will be weakened by lack of attention.

# Methods of Memorisation

## ಸ್ಮರಣೆಯ ವಿಧಾನಗಳು :

1-Recitation Method (**ಪಠಣ** ವಿಧಾನ)

2-Spaced and Unspaced Methods(Distributed and Massed Practice)

(ಅಂತರ ಮತ್ತು ನಿರಂತರ ವಿಧಾನ ಅಭ್ಯಾಸ)

3-Part and Whole Methods (ಇಡಿ ಮತ್ತು ಬಿಡಿ ವಿಧಾನ)

4-Meaningful and rote Learning (ಅರ್ಥಪೂರ್ಣ ಕಲಿಕೆ ಮತ್ತು ಕಂಠಪಾಠ )

5-Principles of Association (ಸಂಯೋಜನಾ ವಿಧಾನ)

a-Law of contiguity (ಸಾಮ್ಯತೆಯ ನಿಯಮ)

b-Law of Similarity (ಸಾಮೀಪ್ಯತೆಯ ನಿಯಮ)

c- Law of contrasts (ಭಿನ್ನತೆ ನಿಯಮ)

# 1) Recitation method :ಪಠಣ ವಿಧಾನ

In this method a learner first reads the matter once or twice and then tries to recite and recall it without looking at the material.

- The recitation method thus provides continuous self-appraisal.
- The learner evaluates himself from time to time and makes notes of the points which he has been unable to recall.
- Due attention can be paid to these points and so he does not have to unnecessarily repeat the already memorized material.
- Moreover, the recitation method is more stimulating than the continued re-reading of the same material.
- It helps in detecting errors made earlier and avoiding them by paying closer attention.

## 2) Spaced and unspaced methods (Distributed and massed practice) :

## ಅಂತರ ವಿಧಾನ ಮತ್ತು ನಿರಂತರ ಅಭ್ಯಾಸ

- In the spaced or distributed practice the subject is not required to memorise the assigned material in one sitting.
- Each time after memorizing the material for some time, a period of rest is provided and the principle of work and rest' is followed throughout.
- On the other hand, in the unspaced or massed practice, the subject has to memorise the assigned material in one sitting without any interval or rest until it is mastered.
- The economy in the use of either of these two methods depends upon the ability and maturity of the learner and the nature and extent of the learning material.

# 3) Part and whole Methods : ಇಡಿ ಮತ್ತು ಬಿಡಿ ವಿಧಾನ

- In the part method, the learning material is divided into parts and each part is memorized separately.
- On the other hand, in the whole method, every time the material as a whole is read from the beginning till the end.
- Which of these two is more suitable and economical depends upon the prevailing conditions and the nature of the matter to be memorized.
- The whole method is found to be better than the part' method of memorizing a thing which requires less time like a short poem for instance, while the part method proves more advantageous if the poem is a long one.
- In some cases, a combination of the two methods has been found most suitable.

# 4) Meaningful and Rote learning: ಅರ್ಥಪೂರ್ಣ ಕಲಿಕೆ ಮತ್ತು ಕಂಠಪಾಠ

- If a person is learning and memorizing without understanding it, he is said to be using the rote method of memorization.
- On the other hand, meaningful learning involves deep understanding of the learning material. In general, one can learn meaningful material more readily than nonsense material.
- A sentence will be generally easier than list of unconnected words and a meaningful word easier than nonsense syllables.
- In learning nonsense syllables, one employs the method of rote learning which is a mechanical process.
- In meaningful learning, one tries to build up associations between the various segments of the material. It is more efficient and useful than rote learning.

# 5) Principles of Association: ಸಂಯೋಜನಾ ವಿಧಾನ

- If you try to recall the name of one of your childhood classmates, names of many such old classmates will flash before you.
- Not only that you will recollect the classrooms, school building and even the teachers. This is association.
- Association may be described as a process in which two or more experiences or functions are linked together in such a way that learning, retention and reproduction of one item will facilitate the learning, retention or reproduction of another item.
- Various factors which contribute to association have been brought together under a few general principles or laws.

## i) Law of contiguity : ಸಾಮ್ಯತೆಯ ನಿಯಮ

- According to this principle when two or more items are associated in time or place, the recall of one item will facilitate the recall of the other.
- For example, if you can recall the name of one of the freedom fighter for eg: Gandhiji you will recall along with that the names of the other freedom fighters say Nehru, S.C. Bose, L.B. Sastry etc.
- Similarly you can recall the names of different rivers of south India as they have space contiguity.

## ii) Law of similarity : ಸಾಮೀಪ್ಯತೆಯ ನಿಯಮ

- If two or more things are similar, the recall of one tends to facilitate the recall of others.
- For eg : The word 'but' brings to your mind the words which are having similar sounds such as cut, nut, shut etc.
- The name of Akbar brings to your mind the names of Shahajahan, Jahangir etc. as there is similarity between them in the sense that they all belong to Mughal dynasty

## iii) Law of contrasts : ಭಿನ್ನತೆ ನಿಯಮ

- As it is in the case of similar items contrasting items appear together in the consciousness.
- If you recall the tallest teacher you had, together with that person you can recall the teacher who was very short.
- Rose may lead to recall jasmine as the colours of the two are contrasting.

# TUTORIALS

1- What is Memory? What are the signs of good Memory?(10 Marks)

2- Explain the three systems of Memory.(6M)

3- Explain the factors influencing Memory.(10M)

3- Explain the Methods of improving Memory.(10M)

## c. Forgetting

– Concept

- Causes

- Types

- Forgetting Curve

## FORGETTING : ವಿಸ್ಮೃತಿ (ಮರೆವು)

- The inability to recall is known as forgetting.
- It is the loss of memory. It is an essential aspect of the learning process.
- One must be able to forget the improper. wrong. Nonessential irrelevant things in order to acquire correct information.
- In other words forgetting is a boon to us.
- If we don't have the forgetting ability, then our life would have been miserable.
- On the other hand unusual, excessive forgetfulness causes great harm to us.
- Forgetting occurs only when some learning takes place.

- Forgetting may occur due to failure at any of the stages. It may be forgotten because of failure of encoding, or storage or retrieval.

- "**Forgetting means failure at any time to recall an experience, when attempting to do so or to perform an action previously learned**". – **Drever**

- “ಹಿಂದೆ ಕಲಿತಂತಹ ಕಾರ್ಯವನ್ನು ನಿರ್ವಹಿಸಲು ಸಾಧ್ಯವಾಗದಿರುವುದು ಅಥವಾ ಹಿಂದೆ ಪಡೆದ ಅನುಭವವನ್ನು ಅಗತ್ಯವಾದಾಗ ಮನಃಸ್ಮರಣೆಗೆ ತರಲು ಸಾಧ್ಯವಾಗದಿರುವುದನ್ನು ವಿಸ್ಮೃತಿ ಎನ್ನುವರು” – **ಡೀವರ್.**

- **"Forgetting is the failure of the individual to revive in consciousness an idea or group of ideas without the help of original stimulus."** – **Bhatia**

- “ಒಂದು ವಿಚಾರ ಅಥವಾ ಹಲವು ವಿಚಾರಗಳನ್ನು ಮೂಲ ಉದ್ದೀಪನದ ಅನುಪಸ್ಥಿತಿಯಲ್ಲಿ ಪುನಃಸ್ಮರಣೆಗೆ ತಂದುಕೊಳ್ಳಲು ಸಾಧ್ಯವಾಗದಿರುವುದನ್ನು ವಿಸ್ಮೃತಿ ಅಥವಾ ಮರೆವು ಎನ್ನುವರು? --**ಭಾಟಿಯಾ.**

## Kinds of Forgetting : ವಿಸ್ಮೃತಿಯ (ಮರೆವಿನ) ವಿಧಗಳು:

Two kinds of forgetting are

**1) Passive or Natural forgetting (ನಿಷ್ಕ್ರಿಯ ಅಥವಾ ಸ್ವಾಭಾವಿಕ ಮರೆವು)**

**2) Active or Morbid forgetting (ಕ್ರಿಯಾತ್ಮಕ ಅಥವಾ ಪ್ರೇರಿತ ಮರೆವು)**

### 1-Natural forgetting : (ನಿಷ್ಕ್ರಿಯ ಅಥವಾ ಸ್ವಾಭಾವಿಕ ಮರೆವು)

The kind of forgetting in which there is no intension of forgetting on the part of individual is known as Natural forgetting.

- In this kind one has not to make any deliberate efforts.
- In a quite normal way, with the lapse of time one gradually forgets, so many things experienced and learned earlier

## 2-Active or Morbid forgetting : (ಕ್ರಿಯಾತ್ಮಕ ಅಥವಾ ಪ್ರೇರಿತ ಮರೆವು)

- In this forgetting one deliberately tries to forget something This kind of forgetfulness originates from repression.
- Under this process, the painful experiences and bitter memories are deliberately pushed into the unconscious layer of the mind and are left there for forgetting.

## Causes for Forgetting:(ಮರೆಯಲು ಕಾರಣಗಳು)

**1-Decay: (ನಶಿಸು )**

Memories may fade or erode– poorly supported

**2-Lack of Concentration- (ಏಕಾಗ್ರತೆಯ ಕೊರತೆ)**

During learning Process-Fear, Tension, Stress- Lead to disturbance in recalling process.

**3-Unsatisfactory Experience (ಅತೃಪ್ತಿಕರ ಅನುಭವ)**During learning process.

## 4-Encoding failure: (ಸಂಕೇತಿಕರಣ ವಿಫಲತೆ)

- Massive forgetting takes place because the experiences of persons, objects and events are not processed properly.
- Sensory information must be processed at a deep level before our experiences become a part of our LTM.
- The STM has limited capacity of storage. As a result the information reaching it is either knocked out by other information that comes to it through shift of attention to subsequent sensory stimulations. This is known as displacement.
- Also, there may be decay due to the absence of deep level of processing, under this condition, experienced information is not transferred to LTM for permanent storage.
- Thus, a person may forget because of encoding failure

**5-Storage failure** : **(ದಾಸ್ತಾನು ವಿಫಲತೆ)**

- A great deal of forgetting occur owing to failure of storage in LTM. It has been found that forgetting from LTM may takes place due to many factors.
- It may be due to the decay of memory traces because the stored material is not in use for a long period of time, owing to disuse, the memory trace fades and ultimately become inaccessible.
- Memories deteriorate with time, if they are not in use. Once you have memorized a list of words or a poem, and have not used it for a very long time, you may not be able to recall it.
- Even prompting may not be of any help. However if you read it again and try to relearn, you are able to do so, quickly. This process is called saving.

## 6-Retrieval failure : (ಜ್ಞಾಪಿಸಿಕೊಳ್ಳುವಿಕೆ ವಿಫಲತೆ )

- This is the most important aspect of forgetting. Such failures occur due to many factors.
- The first factor is the context of memorization. If you have memorized in one context but try to recall it in another context, which is dissimilar, you fail to retrieve it.

- For instance, let us suppose that you go to your uncle's place and stay there for a couple of weeks. You meet many strangers, and become well acquainted with them. Those persons and your interactions with them get encoded in your LTM. Now, further suppose that you see one of them in your friend's birthday party, change of context blocks retrieval of your experiences with him.

- Another factor that leads to retrieval failure is the nature of materials stored in memory before and after the target memory segment. It is called retrieval failure due to interference.

## 7-Interference: (ಅವರೋಧ)

- A major cause of forgetting that affects us every day is interference.

  Whenever we try to recall any given memory, two types of interference can hinder our efforts.
- Information or associations stored either before or after an item can interfere with our ability to remember it.
- Interference can reach either forward or backward in time to affect memory. Also, the more similar the interfering associations are to what we are trying to recall, the more trouble we have in recalling the information.

- **Proactive interference : (ಮುಮ್ಮುಖ ಅವರೋಧ )**
- Proactive interference occurs when information or experiences already stored in LTM hinders our ability to remember new information,
- for eg: when you drive a new car, it may take a while to feel comfortable with the new arrangement of the dashboard.
- Your earlier habits of responding to the old car's dashboard may interfere with your driving at first. This type of proactive interference is called negative transfer.
- **ಮುಮ್ಮುಖ ಅವರೋಧ** : ಹಿಂದಿನ ಕಲಿಕೆ ಪ್ರಸ್ತುತ ಕಲಿಕೆಯಲ್ಲಿ ಮಧ್ಯೆ ಪ್ರವೇಶಿಸುವುದನ್ನು ಮುಮ್ಮುವಿ ಅವರೋಧ ಎನ್ನುವರು.
- ಉದಾ: ಪ್ರಸ್ತುತ ಅವಧಿಯಲ್ಲಿ ನಾವು ರಾಜ್ಯ ಸರ್ಕಾರದ ರಚನೆ ಹಾಗೂ ಕಾರ್ಯಗಳ ಬಗ್ಗೆ ಅಧ್ಯಯನ ಮಾಡುತ್ತಿರುತ್ತೇವ. ಆಗ ಹಿಂದಿನ ಅವಧಿಯಲ್ಲಿ ನಾವು ರಾಜ್ಯ ಸರ್ಕಾರದ ರಚನೆ ಹಾಗೂ ಕಾರ್ಯಗಳ ಬಗ್ಗೆ ಅಧ್ಯಯನ ಮಾಡುತ್ತಿರುತ್ತೇವೆ. ಆಗ ಹಿಂದಿನ ಅವಧಿಯಲ್ಲಿ ಅಧ್ಯಯನ ಮಾಡಿದ ಕೇಂದ್ರ ಸರ್ಕಾರದ ರಚನ ಹಾಗೂ ಕಾರ್ಯಗಳ ಜ್ಞಾನ ಈಗಿನ ವಿಷಯಗಳನ್ನು ನೆನಪಿನಲ್ಲಿಟ್ಟುಕೊಳ್ಳಲು ಅಡ್ಡಿಯನ್ನುಂಟು ಮಾಡುತ್ತದೆ.
- ರಾಜ್ಯ ಸರ್ಕಾರದ ರಚನೆಯ ವಿಷಯಗಳನ್ನು ನೆನಪಿಗೆ ತಂದುಕೊಳ್ಳುವಲ್ಲಿ ಹಿಂದೆ ಕಲಿತ ವಿಚಾರಗಳು ಅಡ್ಡಿಯನ್ನುಂಟುಮಾಡುತ್ತವೆ.

- **Retroactive inhibition : (ಹಿಮ್ಮುಖ ಅವರೋಧ )**
- New learning or experience that interferes with our ability to remember information previously stored is called retroactive inhibition.
- The more similar the new learning or experience is to the previous learning, the more interference there is .

**ಹಿಮ್ಮುಖ ಅವರೊಧ** :

- ಪ್ರಸ್ತುತ ಕಲಿಕೆ ಹಿಂದಿನ ಕಲಿಕೆಯಲ್ಲಿ ಮಧ್ಯೆ ಪ್ರವೇಶಿಸುವುದನ್ನು ಹಿಮ್ಮುಖ ಅವರೋಧ ಎನ್ನುವರು.
- ಉದಾ: ಮೊದಲ ಅವಧಿಯಲ್ಲಿ ಭೌತಶಾಸ್ತ್ರ ಕಲಿತು ನಂತರದ ಅವಧಿಯಲ್ಲಿ ಗಣಿತ ಕಲಿಯುತ್ತೇವೆ. ಆಗ ಗಣಿತದ ಕಲಿಕೆ ಭೌತಶಾಸ್ತ್ರದ ವಿಷಯವನ್ನು ನನಪಿನಲ್ಲಿಟ್ಟುಕೊಳ್ಳಲು ಅಡ್ಡಿಯನ್ನುಂಟುಮಾಡಿದರೆ ಅದನ್ನು ಹಿಮ್ಮುಖ ಅವರೋಧ ಎನ್ನುವರು.
- ಎರಡು ವಿಷಯಗಳ ಕಲಿಕೆಯಲ್ಲಿ ಸಾಮ್ಯತೆ ಹೆಚ್ಚಾಗಿದ್ದಷ್ಟೂ ಮರವು ಹೆಚ್ಚಾಗಿರುತ್ತದೆ.

**8-Motivated forgetting /Repression**: **(ದಮನ)**

- Forgetting through suppression or repression in order to protect oneself from material that is too painful, anxiety or guilt producing or otherwise unpleasant is known as motivated forgetting,
- For eg : survivors of airplane crashes or earth quakes all have had terrifying experiences that may haunt them for years.
- These victims are certainly motivated to forget their traumatic experiences, but even people who have not suffered any trauma use motivated forgetting to protect themselves from experiences that are painful, frightening or otherwise unpleasant.

**9-Amnesia : (ವಿಸ್ಮೃತಿ)**

- Amnesia means partial or complete loss of memory resulting from brain trauma or psychological trauma.
- It may involve profound impairment to memory store, or impairment of encoding ability or loss of retrieval capacity. Severity of amnesia varies from case to case.
- After treatment some patients recover from memory loss partially, some completely, some patient never recover from amnesia

**10-Drug Addiction:(ಮಾದಕ ವ್ಯಸನ)**

## TUTORIALS WORK

1. What is forgetting? Explain in brief the kinds of forgetting. (6M)

   ವಿಸ್ಮೃತಿ ಅಥವಾ ಮರೆವು ಎಂದರೇನು? ವಿಸ್ಮೃತಿಯ ವಿಧಗಳನ್ನು ಸಂಕ್ಷಿಪ್ತವಾಗಿ ವಿವರಿಸಿ, ಮರೆವಿಗೆ ಕಾರಣಗಳೇನು?

2. What are the important causes of forgetting? (6M)

   ಮರೆವಿಗೆ ಕಾರಣಗಳೇನು?

3. Explain proactive and retroactive interference as causes of forgetting. (6M)

   ಮುಮ್ಮುಖ ಮತ್ತು ಹಿಮ್ಮುಖ ಅವರೋಧವು ಮರೆವಿಗೆ ಹೇಗೆ ಕಾರಣವಾಗುತ್ತದೆ ಎಂಬುದನ್ನು ತಿಳಿಸಿರಿ,

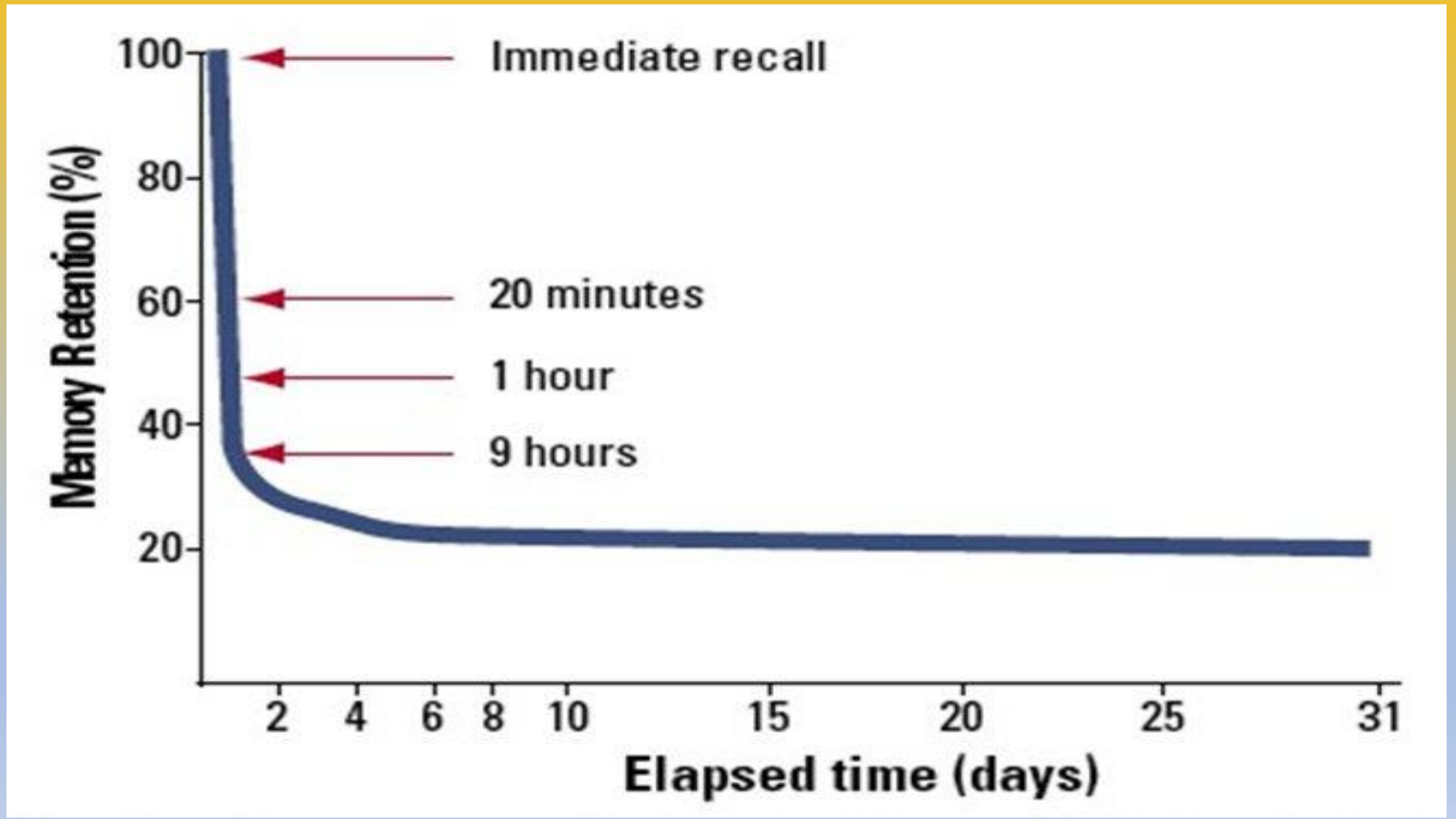
# Forgetting Curve/ Ebbinghaus Forgetting Curve

## ➢ ಹರ್ಮನ್ ಎಬ್ಬಿಂಗ್ಹಾಸ್‌ರವರು ಮರೆವಿನ ವಕ್ರ ರೇಖೆ

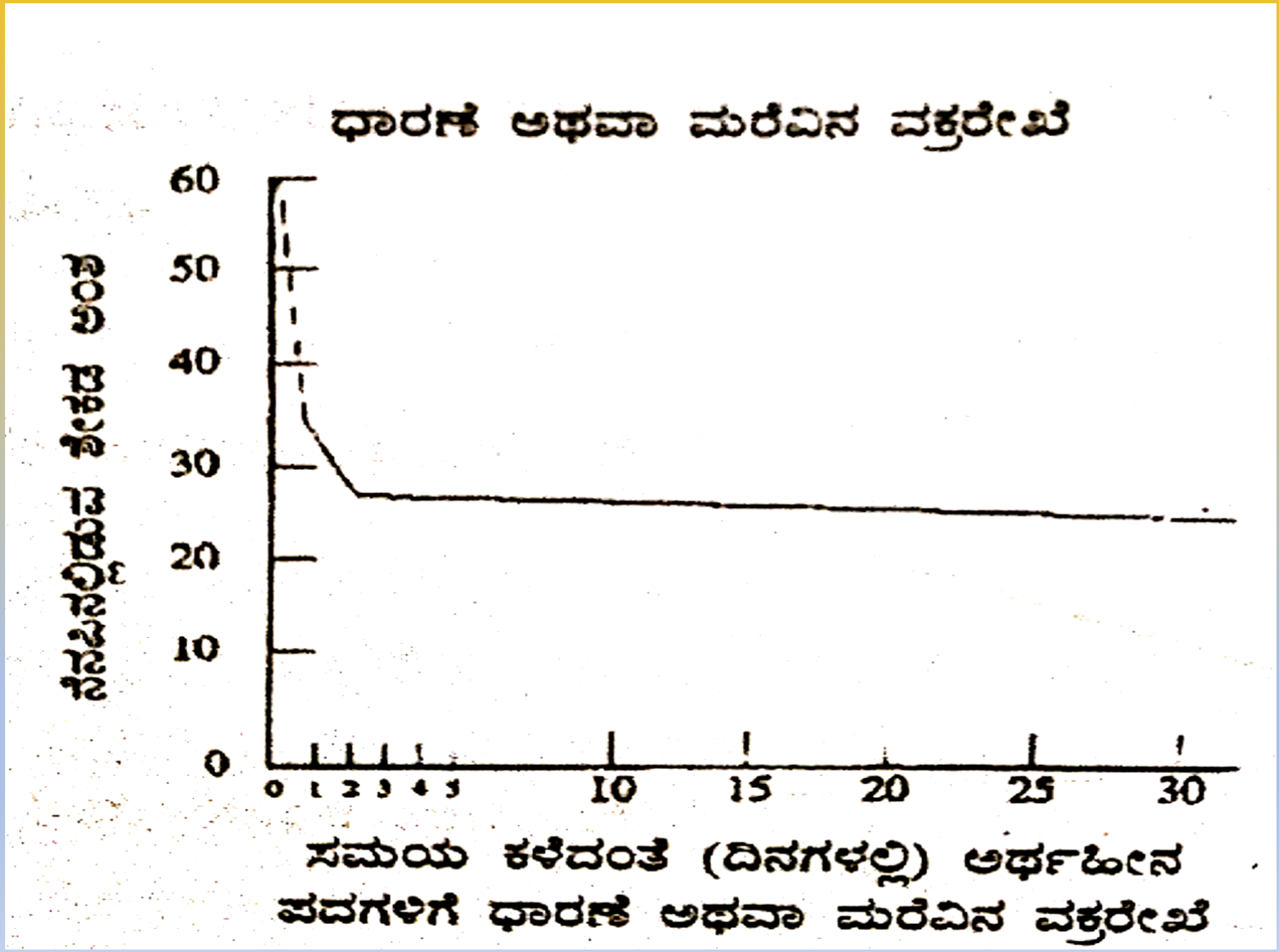
- The Forgetting Curve Hermann Ebbinghaus (1850-1909)was a German psychologist who founded the experimental psychology of memory.
- Ebbinghaus' research was groundbreaking at the time, and his work (though he was not a proliferate writer) was generally well received.
- In recognition of his work in psychology, the "forgetting curve"—the loss of learned information—is sometimes referred to as the "Ebbinghaus Forgetting Curve."

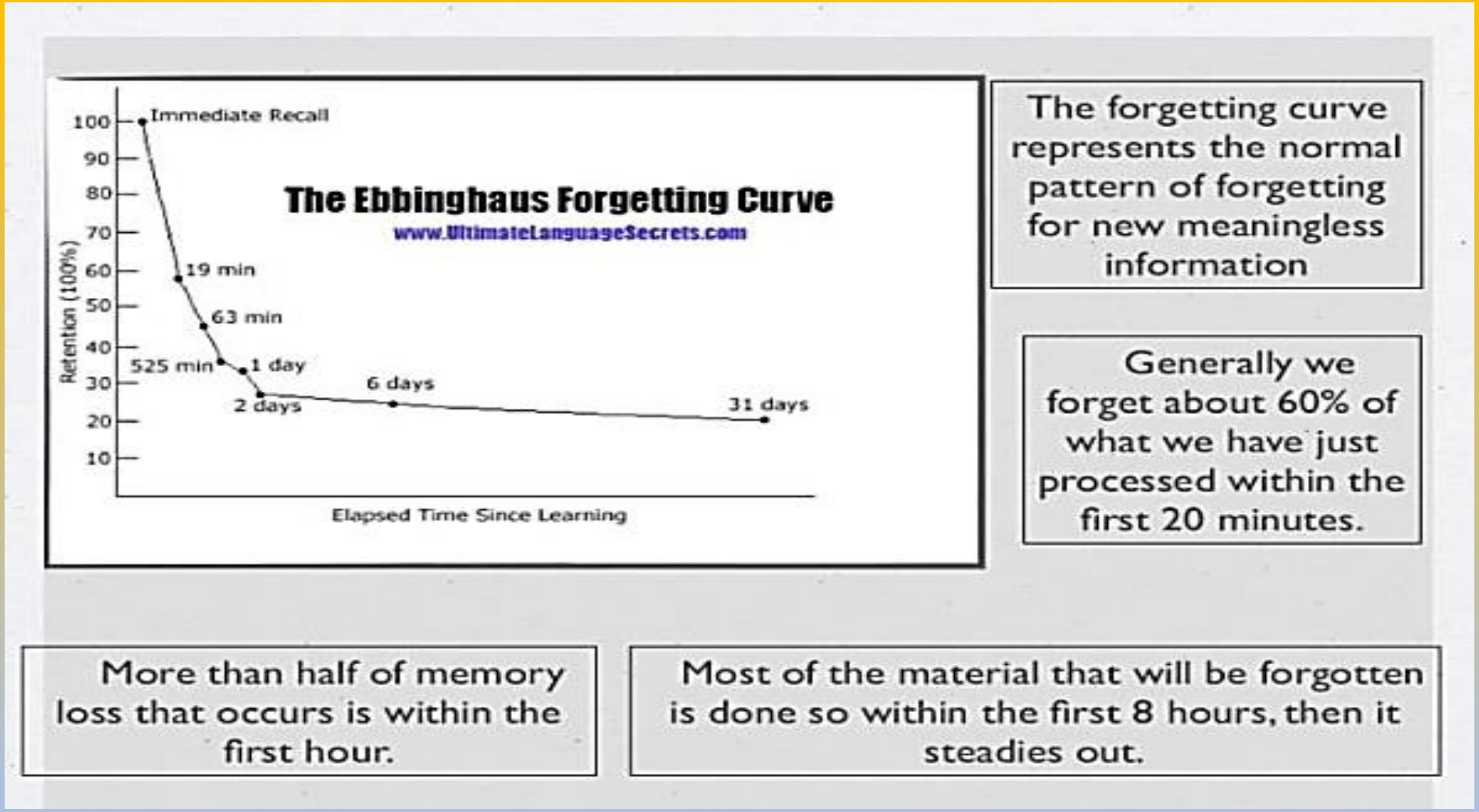
- Ebbinghaus performed his experiments on himself.
- He would first memorize lists of meaningless syllables, say these:
- DIF, LAJ, LEQ, MUV, WYC, DAL, SEN, KEP, NUD
- After that, he tested himself periodically, to see how many of the nonsense syllables he remembered at various points in time.
- Ebbinghaus discovered that his memory of them quickly decayed.

# Forgetting Curve/ Ebbinghaus Forgetting Curve/ ಎಬ್ಬಿಂಗ್ಹಾಸ್‌ರವರು ಮರೆವಿನ ವಕ್ರ ರೇಖೆ

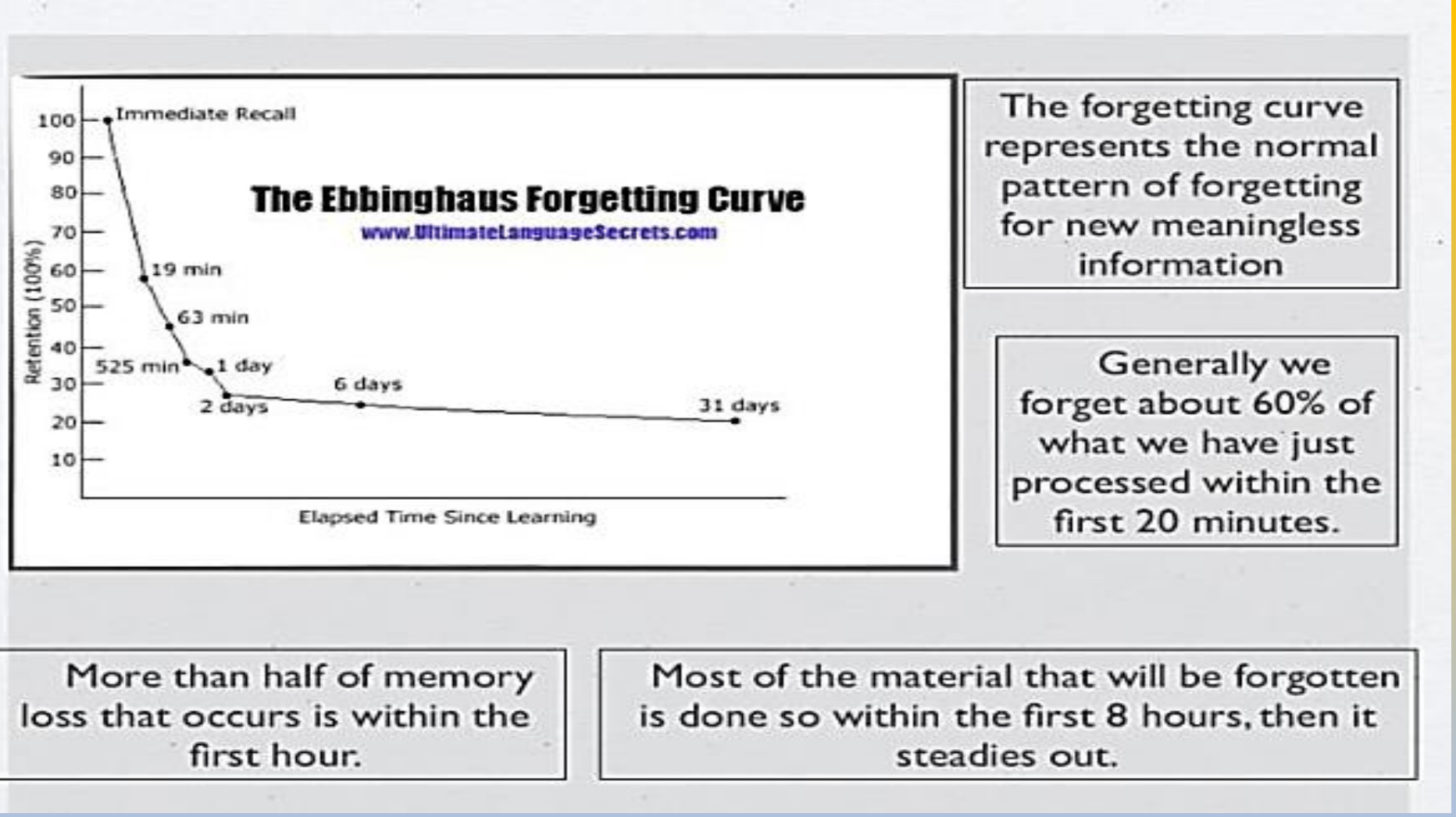


# ಹರ್ಮನ್ ಎಬ್ಬಿಂಗ್ಹಾಸ್‌ರವರು ಮರೆವಿನ ವಕ್ರ ರೇಖೆ






The graph shows the process by which forgetting occurs. According to this research, people tend to forget rather quickly after learning material then forgetting slowly levels out.




The implications of this for college students is obvious—a day or two after attending class or reading a chapter or article, students will have forgotten approximately 75% of what was learned. Moreover, most of that forgetting happens within the first hour.

- However, although the forgetting curve is a natural process, the process itself can be disrupted.
- That is, although it is natural for people to forget much of what they have learned immediately following an experience, simple processes can be used to slow down forgetting and to help us retain much of the information we will need to recall at a later date (such as test time).

# Advice on Review

- The first thing you have to do is to **take well-crafted notes on material**—this includes anything you want to remember well such as a **lecture, a chapter from a textbook, an article from the library, etc.**
- Without something to review from, reviewing would be impossible.
- Right after class has ended or you have finished reading something, **make a plan to review the material**.
- Remember, **don't wait too long before your first review**.

- Try to review within at least an hour. It's good to take the opportunity on your first review to organize notes.
- One week later, review again and test yourself on your recall. This will tell you how effective your review is.
- A few weeks to a month later, review and test yourself again.

## d. Transfer of Learning – ಕಲಿಕೆಯ ವರ್ಗಾವಣೆ

- **Concept,**
- **Types,**
- **Theories (brief), and**
- **Measures to maximize the transfer.**

- **TRANSFER OF LEARNING**

  The purpose of education is to enable the individual to meet new situations more effectively.

- We hope that what we learn on one occasion facilitates our dealings effectively with another situation of related nature.

- This effect of learning is called transfer of learning.

- The term transfer of learning is often called **transfer of training or transfer effect.** It refers to the effects of prior learning on new learning.

- Whatever we teach in schools we assume that children will use that knowledge, skill and information after completing their formal education to solve problems in life.
- We teach maths on the assumption that the knowledge of maths will be used in daily life to handle the problems involving the use of maths.
- We teach civics on the assumption that knowledge of civics will help to face the social problems successfully.

**Definitions:**

**“The carryover of knowledge, skills, habits, attitudes or other responses from one learning area to another is usually referred to as the transfer of learning”.--- Crow and Crow (1973)**

“ಒಂದು ಕಲಿಕೆಯ ಕ್ಷೇತ್ರದಲ್ಲಿ ಪಡೆದ ಅಭ್ಯಾಸ, ಅಭಿರುಚಿ, ಭಾವನೆಗಳು, ವಿಷಯ ಜ್ಞಾನ, ಕುಶಲತೆ ಮುಂತಾದವುಗಳನ್ನು ಇನ್ನೊಂದು ಕಲಿಕೆಯ ಕ್ಷೇತ್ರಕ್ಕೆ ವರ್ಗಾಯಿಸುವುದೇ ಕಲಿಕೆಯ ವರ್ಗಾವಣೆ”. ---- ಕ್ರೋ ಮತ್ತು ಕ್ರೋ.

**“Transfer refers to the transfer of knowledge, training and habits acquired in one situation to another situation”. ---Sorenson (1948)**

“ಕಲಿಕೆಯ ವರ್ಗಾವಣೆಯೆಂದರೆ ಒಂದು ಸನ್ನಿವೇಶದಲ್ಲಿ ಕಲಿತ ಜ್ಞಾನ, ತರಬೇತಿ, ಕುಶಲತೆ ಹಾಗೂ ಅಭ್ಯಾಸಗಳನ್ನು ಇನ್ನೊಂದು ಸನ್ನಿವೇಶಕ್ಕೆ ವರ್ಗಾಯಿಸುವುದಾಗಿದೆ”. ಸೂರನ್ಸನ್,

**“Transfer of learning occurs when a person's learning in one situation influences his learning and performances in other situations”. ---Bigge (1967)**

“ವ್ಯಕ್ತಿಯ ಒಂದು ಸನ್ನಿವೇಶದಲ್ಲಿನ ಕಲಿಕೆ ಇನ್ನೊಂದು ಸನ್ನಿವೇಶದಲ್ಲಿನ ಕಲಿಕೆ ಮತ್ತು ಸಾಧನೆಯ ಮೇಲೆ ಪ್ರಭಾವ ಬೀರುವುದನ್ನು ಕಲಿಕೆಯ ವರ್ಗಾವಣೆ ಎನ್ನುವರು”,
, ಎಲ್, ಬಿಗ್.

**Types of transfer: ಕಲಿಕೆಯ ವರ್ಗಾವಣೆ**

Depending on the learning situations faced by the learner, the following three kinds of transfer can occur.

1) Positive transfer: ಧನಾತ್ಮಕ ವರ್ಗಾವಣೆ,

2) Negative transfer: ಋಣಾತ್ಮಕ ವರ್ಗಾವಣೆ

3) Zero / Neutral transfer: ಮತ್ತು ಶೂನ್ಯ ವರ್ಗಾವಣೆ

**Positive transfer**: ಧನಾತ್ಮಕ ವರ್ಗಾವಣೆ,

Performance on one task **may aid or facilitate performance** of second task is known as positive transfer or learning in one situation proves helpful to the learner in another situation

Eg: 1) The learning of addition and subtraction helps a child in learning multiplication and division.

2) Learning of mathematics helps in solving numerical problems in physics.

3) Learning of grammar will improve pupils performance in composition.

**Negative transfer: ಋಣಾತ್ಮಕ ವರ್ಗಾವಣೆ**

Performance on one task may inhibitor disrupt performance on a second task or learning in one situation hinders, interferes, or weakens the learning in another situation is called **negative transfer**

Egs: 1) Learning of mother tongue interferes with the learning of second language or foreign language

2) One who is driving an auto-gear motorcycle may find difficulty in driving a geared motorcycle

3) Learning of pronunciation of words. Eg. but and put.

**Zero transfer or neutral transfer : ಶೂನ್ಯ ವರ್ಗಾವಣೆ**

Transfer is said to be zero when leaning in **one situation does not have any significant influence** over the learning or training in another situation.

Here there may be no effect of one task on another

Eg: 1) Learning of **algebra has no effect on the learning of civics**.

2) Learning to play **Ball badminton** may not help or hinder learning to **play football.**

3) Learning to play a **musical instrument neither helps nor hinders one's performance in swimming.**

## Forms of transfer: ಕಲಿಕೆಯ ವರ್ಗಾವಣೆಯ ವಿಧಗಳು

**1.Lateral transfer** : ಪಾರ್ಶ್ವ ವರ್ಗಾವಣೆ

**2. Sequential transfer:** ಕ್ರಮಾನುಗತ ವರ್ಗಾವಣೆ

**3. Vertical transfer** : ಲಂಬ ವರ್ಗಾವಣೆ

**4. Bilateral transfer**: ದ್ವಿಪಾರ್ಶ್ವ ವರ್ಗಾವಣಕ

## 1.Lateral transfer : ಪಾರ್ಶ್ವ ವರ್ಗಾವಣೆ

- Suppose a child has been taught the addition and subtraction facts.
- The child would transfer this understanding to **other life situations**.
- This is called **lateral transfer.**
- It is the most common form of transfer to occur when understanding and skills specifically taught in school are employed by the child in learning situations outside the school.

## 2. Sequential transfer: ಕ್ರಮಾನುಗತ ವರ್ಗಾವಣೆ :

- Most of the subject matter taught in schools, is organized into broad disciplines, the content of which is taught sequentially; that is an idea taught today will have some relation to an idea to be taught tomorrow and both ideas will have some relationship to the ideas taught the next day.
- Thus positive facilitation of present learning through past learning is called sequential transfer.
- Eg: Addition helps in learning multiplication, subtraction helps in learning division etc.
- **Lateral and sequential transfers are called horizontal transfer** because the learner stays within the same behavioural category in making the transfer.

## 3. Vertical transfer : ಲಂಬ ವರ್ಗಾವಣೆ

- Learning at one behavioural **level facilitates learning at a higher behavioural level**, which is known as **vertical transfer.**

  Eg: : **$(a + b)^2$ helps in learning $(a+b)^3$**

- Learning to calculate **simple interest helps in learning to calculate compound interest.**

- World history

  ↑

  Indian History

  ↑

  Local history

## 4. Bilateral transfer: ದ್ವಿಪಾರ್ಶ್ವ ವರ್ಗಾವಣಕ

- The human body is divided **into right and left laterals**.
- Training imparted **one lateral automatically transfers to another lateral**. It is known as **bilateral transfer.**
- If we learn to write with **right hand**, **training of right hand automatically transfers to left hand.**
- We can also **write with our left hand.**
- **Mirror drawing experiment** is an example of transfer of learning from one hand to another hand.

# Theories of Transfer of Learning

# ಕಲಿಕೆಯ ವರ್ಗಾವಣೆಯವಾದಗಳು

1, ಔಪಚಾರಿಕ ಶಿಸ್ತಿನ ವಾದ :Theory Of Mental Disciplines

2. ಸಮಾನ ಮೂಲಾಂಶಗಳ ವಾದ : Theory of Identical elements

3, ಸಾಮಾನ್ಯಕರಣವಾದ: Theory Of Generalisations

4, ಆದರ್ಶಗಳ ವಾದ : Theory of Ideals

5. ಗೆಸ್ಟಾಲ್ಟ್ ವಾದ : Theory of Configuration/Transposition

# ಕಲಿಕೆಯ ವರ್ಗಾವಣೆಯ ವಾದಗಳು ಮತ್ತು ಪ್ರಯೋಗಗಳು

## (Theories of Transfer Of Learning)

ಮನೋವಿಜ್ಞಾನಿಗಳು ತಾವು ಕೈಗೊಂಡ ಹಲವಾರು ಪ್ರಯೋಗಗಳ ಆಧಾರದ ಮೇಲೆ ಕಲಿಕೆ ಹೇಗೆ ವರ್ಗಾವಣೆಯಾಗುತ್ತದೆ? ಎಂಬುದನ್ನು ತಮ್ಮ ವಾದಗಳ ಮೂಲಕ ಮಂಡಿಸಿರುತ್ತಾರೆ.

## 1, ಔಪಚಾರಿಕ ಶಿಸ್ತಿನ ವಾದ :Theory Of Mental Desciplines

- ಈ ವಾದದ ಪ್ರಕಾರ ಮಾನವನ ಮನಸ್ಸು ಹಲವಾರು ಸಹಜ ಸಾಮರ್ಥ್ಯಗಳಾದ ಸ್ಮೃತಿ ,ತರ್ಕ, ಆವಧಾನ, ಕಲ್ಪನಾ ಶಕ್ತಿ ಇತ್ಯಾದಿಗಳಿಂದ ಕೂಡಿದೆ.
- ಗಣಿತ ಶಾಸ್ತ್ರ ಬೋಧನೆ **ಆವಧಾನ ಮತ್ತು ತರ್ಕ ಸಾಮರ್ಥ್ಯವನ್ನು** ಬೆಳೆಸುತ್ತದೆ ಎಂದೂ, ಭಾಷಾ ಬೋಧನೆ **ಸ್ಮೃತಿ ಶಕ್ತಿಯನ್ನು ವರ್ಧಿಸುತ್ತದೆಂದೂ**,
- ಸಾಹಿತ್ಯದ ಕಲಿಕೆ **ಕಲ್ಪನಾಶಕ್ತಿಯನ್ನು** ಹೆಚ್ಚಿಸುತ್ತದೆಂದೂ,
- ವಿಜ್ಞಾನದ ಕಲಿಕೆ **ಆತ್ಮ ವಿಶ್ವಾಸವನ್ನು** ವರ್ಧಿಸುತ್ತದೆಂದೂ ನಂಬಿದ್ದರು.
- ಒಂದು ವಿಷಯದಲ್ಲಿ ನೀಡುವ ವ್ಯವಸ್ಥಿತ ತರಬೇತಿ ಒಂದು ಮಾನಸಿಕ ಸಾಮರ್ಥ್ಯವನ್ನು ಅಭಿವರ್ಧಿಸುತ್ತದೆ ಎಂಬುದು ಈ ವಾದದ ತಿರುಳು.

ಆದರೆ ವಿಲಿಯಂ ಜೇಮ್ಸ್‌ರವರು 1890 ರಲ್ಲಿ ಕೈಗೊಂಡ ಪ್ರಯೋಗದ ಆಧಾರದ ಮೇಲೆ ಈ ವಾದವನ್ನು ವಿರೋಧಿಸಿದರು. ವುಡ್‌ವರ್ತ್ ಮತ್ತು ಇತರರು ಸಹಜ ಸಾಮರ್ಥ್ಯಗಳ ಸಿದ್ಧಾಂತವನ್ನು ಅಲ್ಲಗಳೆದಿದ್ದಾರೆ,

## 2. ಸಮಾನ ಮೂಲಾಂಶಗಳ ವಾದ ;(Theory of Identical elements)

ಈ ವಾದವನ್ನು. **ಎಲ್. ಥಾರ್ನ್‌ಡೈಕ್‌ರವರು** ಪ್ರತಿಪಾದಿಸಿದ್ದಾರೆ.

- ಈ ವಾದದ ಪ್ರಕಾರ ಎರಡೂ **ಕಲಿಕೆಯ ಸನ್ನಿವೇಶಗಳ ನಡುವ ಸಮಾನ ಆಂಶಗಳಿದ್ದರೆ** ಆಗ ವರ್ಗಾವಣೆ ಹೆಚ್ಚಾಗಿರುತ್ತದೆ.
- ಥಾರ್ನ್ಡೈಕ್‌ರವರ ಪ್ರಕಾರ ಒಂದು ಸನ್ನಿವೇಶದಿಂದ ಇನ್ನೊಂದು ಸನ್ನಿವೇಶಕ್ಕೆ ಆಗುವ ಕಲಿಕೆಯ ವರ್ಗಾವಣೆ ಆ ಸನ್ನಿವೇಶದಲ್ಲಿ ಇರುವ **ಸಮಾನ ವಿಷಯಗಳು, ತತ್ವಗಳು, ವಿಧಾನಗಳು, ಮನೋಧೋರಣೆಗಳು, ಗುರಿ** ಇಂತಹ ಮೂಲಾಂಶಗಳ ಪರಿಮಾಣಕ್ಕೆ ಅನುಗುಣವಾಗಿ ಆಗುತ್ತದೆ.

ಉದಾ: **ಕಾರ್** ಚಾಲನೆ ಕಲಿತವನಿಗೆ **ಟ್ರಕ್** ಚಾಲನೆ ಸುಲಭವಾಗುತ್ತದೆ.

**ಬಾಲ್ ಬ್ಯಾಡ್ಮಿಂಟನ್** ಕಲಿತವನಿಗೆ **ಷಟಲ್ ಬ್ಯಾಡ್ಮಿಂಟನ್** ಕಲಿಕೆ ಸುಲಭವಾಗುತ್ತದೆ. ಇತ್ಯಾದಿ.

## 3, ಸಾಮಾನ್ಯಕರಣವಾದ: **Theory Of Generalisations**

ಈ ವಾದವನ್ನು **ಚಾರ್ಲ್ಸ್ ಜಡ್‌ರವರು 1908** ರಲ್ಲಿ ಪ್ರತಿಪಾದಿಸಿದರು.

- ಒಂದು ಸನ್ನಿವೇಶದಲ್ಲಿ ಕಲಿತ ತತ್ವಗಳು, ಸೂತ್ರಗಳು, ಸಾಮಾನೀಕರಣಗಳು ಮಾತ್ರ ಹೊಸ ಸನ್ನಿವೇಶಗಳಿಗೆ ವರ್ಗಾಯಿಸಲ್ಪಡುತ್ತವೆ ಎಂಬುದನ್ನು ಈ ವಾದ ತಿಳಿಸುತ್ತದೆ.
- ಈ ವಾದವನ್ನು ಪ್ರತಿಪಾದಿಸಲು ಜಡ್‌ರವರು ಎರಡು ಸಮಾನ ಗುಂಪುಗಳನ್ನು ಆಯ್ಕೆ ಮಾಡಿಕೊಂಡು ಪ್ರಯೋಗ ಕೈಗೊಂಡರು.
- ಎರಡೂ ಗುಂಪುಗಳಿಗೆ ಪೂರ್ವ ಪರೀಕ್ಷೆಯಾಗಿ ನೀರಿನಲ್ಲಿ 12 ಅಂಗುಲ ಆಳದಲ್ಲಿರುವ ವಸ್ತುವಿಗೆ ಗುರಿಯಿಟ್ಟು ಹೊಡೆಯಲು ತಿಳಿಸಲಾಯಿತು. ಎರಡೂ ಗುಂಪುಗಳ ಸಾಧನೆ ಸಮಾನವಾಗಿತ್ತು.

- ನಂತರ ಪ್ರಾಯೋಗಿಕ ಗುಂಪಿಗೆ ವಕ್ರೀಭವನದ ನಿಯಮಗಳನ್ನು ಕಲಿಸಲಾಯಿತು. ಆದರೆ ನಿಯಂತ್ರಿತ ಗುಂಪಿಗೆ ಯಾವುದೇ ತರಬೇತಿಯನ್ನು ನೀಡಲಿಲ್ಲ.
- ನಂತರ ನೀರಿನಲ್ಲಿ 4 ಅಂಗುಲ ಆಳದಲ್ಲಿರುವ ವಸ್ತುವಿಗೆ ಗುರಿಯಿಟ್ಟು ಹೊಡೆಯುವ ಪರೀಕ್ಷೆ ನೀಡಿದಾಗ **ಬೆಳಕಿನ ವಕ್ರೀಭವನ ನಿಯಮ ಕಲಿತಿದ್ದ** ಪ್ರಾಯೋಗಿಕ ಗುಂಪು ಉತ್ತಮ ಸಾಧನೆ ತೋರಿತು ಅಂದರೆ **ಒಂದು ಸನ್ನಿವೇಶದಲ್ಲಿ ಕಲಿತ ತತ್ವವನ್ನು ಸಾಮಾನ್ಯಕರಣಗೊಳಿಸಿ ಇನ್ನೊಂದು ಸನ್ನಿವೇಶಕ್ಕೆ ವರ್ಗಾಯಿಸಿತು.**

## 4, ಆದರ್ಶಗಳ ವಾದ :-Theory of Ideals

**ಡಬ್ಲ್ಯು.ಸಿ, ಬ್ಯಾಗ್ಡೆಯವರು** ಆದರ್ಶಗಳು ಒಂದು ಸನ್ನಿವೇಶದಿಂದ ಇನ್ನೊಂದು ಸನ್ನಿವೇಶಕ್ಕೆ ವರ್ಗಾವಣೆಯಾಗುತ್ತವೆ ಎಂದು ತೋರಿಸಿಕೊಟ್ಟರು.

- ಉದಾಹರಣೆಗೆ ಒಂದು ಅಧ್ಯಯನದಲ್ಲಿ ಗಣಿತದ ಶಿಕ್ಷಕ ತನ್ನ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಗಣಿತದ ವಿಷಯದಲ್ಲಿ ಮತ್ತು ಜೀವನದ ಇತರ ಸನ್ನಿವೇಶಗಳಲ್ಲಿ ನಿಖರತೆ ಮತ್ತು ಸ್ವಚ್ಛತೆಯನ್ನು ಕಾಪಾಡಿಕೊಳ್ಳುವ ಬಗ್ಗೆ ತಿಳಿಸಿದನು ಮತ್ತು ಗಣಿತದ ಮೌಲ್ಯ ಮಾಪನದಲ್ಲಿ ಇದನ್ನು ಪಾಲಿಸುತ್ತಲೂ ಇದ್ದ.
- ಇದರಿಂದ ಆ ವಿದ್ಯಾರ್ಥಿಗಳು ಗಣಿತದಲ್ಲಿಯಷ್ಟೆ ಅಲ್ಲದೇ ಇತರೆ ಎಲ್ಲಾ ಶಾಲಾ ವಿಷಯಗಳಲ್ಲಿಯೂ ಮತ್ತು ತಮ್ಮ ಜೀವನದಲ್ಲಿ ನಿಖರತೆ ಮತ್ತು ಸ್ವಚ್ಛತೆಯನ್ನು ಪಾಲಿಸುತ್ತಿರುವುದು

  ಕಂಡುಬಂದಿತು.
- ಇದರಿಂದ ಆದರ್ಶಗಳು ಒಂದು ಸನ್ನಿವೇಶದಿಂದ ಇನ್ನೊಂದು ಸನ್ನಿವೇಶಕ್ಕೆ ವರ್ಗಾವಣೆಯಾಗಿರುವುದು ಕಂಡುಬರುತ್ತದೆ,

## 5. ಗೆಸ್ಟಾಲ್ಟ್ ವಾದ :Theory of Configuration/Transposition

ಗೆಸ್ಟಾಲ್ಟ್ ವಾದಿಗಳು ಪ್ರತಿಪಾದಿಸಿದ ಈ ವಾದದ ಪ್ರಕಾರ ಒಂದು ಸನ್ನಿವೇಶದಲ್ಲಿ ದೊರೆತ **ಒಳನೋಟ ಇನ್ನೊಂದು ಸನ್ನಿವೇಶಕ್ಕೆ ವರ್ಗಾಯಿಸಲ್ಪಡುತ್ತದೆ.**

- ಒಳನೋಟ ಕಲಿಕೆಯಲ್ಲಿ **ಸಮಸ್ಯಾ ಪರಿಹಾರ** ವ್ಯಕ್ತಿಯ ಸ್ವಪ್ರಯತ್ನದಿಂದ ದೊರೆಯುತ್ತದೆ.
- ಇಂತಹ ಒಳನೋಟ ಕಲಿಕೆಯಿಂದ ಸಂಪಾದಿಸಿದ ಜ್ಞಾನ ಇತರ ಸನ್ನಿವೇಶಗಳಿಗೆ **ವರ್ಗಾಯಿಸಲ್ಪಡುತ್ತದೆ.**

- ಉದಾ: ಕೋಹ್ಲರ್‌ರವರು ಚಿಂಪಾಂಜಿಯೊಂದಿಗೆ ಕೈಗೊಂಡ ಒಳನೋಟ ಕಲಿಕೆಯ ಪ್ರಯೋಗಗಳು.

## ಕಲಿಕೆಯ ವರ್ಗಾವಣೆಯನ್ನು ಹೆಚ್ಚಿಸುವ ವಿಧಾನಗಳು :

**Factors Influencing Transfer of Learning.**

ಕಲಿಕೆಯ ವರ್ಗಾವಣೆಯು ಶೈಕ್ಷಣಿಕ ಕ್ಷೇತ್ರದಲ್ಲಿ ಮಹತ್ವದ ಸ್ಥಾನವನ್ನು ಹೊಂದಿದೆ. ವರ್ಗಾವಣೆ ಹೆಚ್ಚಾದಷ್ಟು ವಿದ್ಯಾರ್ಥಿಗೆ ತನ್ನ ಶ್ರಮ, ಕಾಲವನ್ನು ಉಳಿಸಿ ಕಲಿಕೆಯ ವೇಗವನ್ನು ಹೆಚ್ಚಿಸುತ್ತದೆ.

- ಹಿಂದಿನ ಅನುಭವದ ವರ್ಗಾವಣೆ ಹೆಚ್ಚಾದಷ್ಟು ಹೊಸ ಸನ್ನಿವೇಶದಲ್ಲಿ ಬೇರೆ ವಿಷಯಗಳನ್ನು ಕಲಿಯುವುದು ಸುಲಭವಾಗುತ್ತದೆ.

- ಶಿಕ್ಷಕ ತಾನು ಬೋಧನೆ ಮಾಡುತ್ತಿರುವ ವಿಷಯದ ಯಾವ ತತ್ವಗಳು, ನಿಯಮ ಅಥವಾ ಸಾಮಾನ್ಯಕರಣಗಳು ಕಲಿಕೆಯ ಇತರ ಕ್ಷೇತ್ರಗಳಿಗೆ ವರ್ಗಾಯಿಸಲ್ಪಡಬೇಕು ಎಂಬುದರ ಸ್ಪಷ್ಟ ಅರಿವು ಶಿಕ್ಷಕನಿಗಿರಬೇಕು.
- ಗರಿಷ್ಠಮಟ್ಟದ ಕಲಿಕೆಯ ವರ್ಗಾವಣೆಯನ್ನು ಉಂಟುಮಾಡಲು ಈ ಮುಂದಿನ ಕ್ರಮಗಳನ್ನು ಕೈಗೊಳ್ಳಬಹುದಾಗಿದೆ. ಯಾವುದೇ ವರ್ಗಾವಣೆ ಪ್ರಯತ್ನವಿಲ್ಲದೇ ಆಗಲಾರದು, ಆದ್ದರಿಂದ ಶಿಕ್ಷಕ ಮತ್ತು ವಿದ್ಯಾರ್ಥಿಯ ಸತತ ಪ್ರಯತ್ನದಿಂದ ಮಾತ್ರ ಉತ್ತಮ ಕಲಿಕೆಯ ವರ್ಗಾವಣೆ ಸಾಧ್ಯವಾಗುತ್ತದೆ.

- ಕಲಿಯುವ ವ್ಯಕ್ತಿಯ ದೈನಂದಿನ ಅಗತ್ಯತೆಗಳು ಮತ್ತು ಆಸಕ್ತಿಗಳಿಗೆ ಅನುಗುಣವಾದ ಪಠ್ಯಕ್ರಮವನ್ನು ಬೋಧಿಸಬೇಕು, ವಿದ್ಯಾರ್ಥಿಗಳು ಹಿಂದಿನ ತರಗತಿಯಲ್ಲಿ ಕಲಿತ ವಿಷಯಕ್ಕೂ ಮತ್ತು ಮುಂದೆ ಕಲಿಯುವ ತರಗತಿಯ ವಿಷಯ ಸಂಬಂಧವಿರಬೇಕು.
- ವಿದ್ಯಾರ್ಥಿಗಳ ನೈಜ ಜೀವನದ ಸನ್ನಿವೇಶಗಳಿಗೆ ಉಪಯುಕ್ತವಾಗುವಂತಹ ಕಲಿಕೆಯ ಅನುಭವಗಳನ್ನು ಶಿಕ್ಷಕ ಒದಗಿಸಬೇಕು ಮತ್ತು ಎಂತಹ ವಿಷಯವನ್ನು ಕಲಿಸಬೇಕು ಮತ್ತು ಯಾವ ಉದ್ದೇಶಗಳನ್ನಿಟ್ಟುಕೊಂಡು ಕಲಿಸಬೇಕು ಎಂಬುದರ ಸ್ಪಷ್ಟತೆಯಿರಬೇಕು,
- ಮೂಲ ಪರಿಕಲ್ಪನೆಗಳು ಅಥವಾ ಕಾರ್ಯಗಳಲ್ಲಿ ಸಾಕಷ್ಟು ಅನುಭವ ಒದಗಿಸಿ ಮೂಲ ಕ್ರಿಯೆ ಅಥವಾ ಕಾರ್ಯದ ಬಗ್ಗೆ ಹೆಚ್ಚಿನ ತರಬೇತಿ ನೀಡಿದರೆ ಮುಂದಿನ ಸನ್ನಿವೇಶಕ್ಕೆ ಹೆಚ್ಚಿನ ಧನಾತ್ಮಕ ವರ್ಗಾವಣೆಯಾಗುವ ಸಾಧ್ಯತೆಯಿರುತ್ತದೆ, ಆದ್ದರಿಂದ ಮೂಲ ಪರಿಕಲ್ಪನೆಗಳು ಹಾಗೂ ಕಾರ್ಯಗಳಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಹೆಚ್ಚಿನ ತರಬೇತಿ ನೀಡಬೇಕು. ಉದಾ: ಆಂಕಗಣಿತದ ಮೂಲ ಕೌಶಲಗಳಾಧ ಕೂಡುವಿಕೆ, ಕಳೆಯುವಿಕೆ, ಗುಣಿಸುವಿಕೆ, ಭಾಗಿಸುವಿಕೆ ಇವುಗಳಲ್ಲಿ ಹೆಚ್ಚಿನ ತರಬೇತಿ ನೀಡಿದರೆ ಅವನಿಗೆ ಮುಂದಿನ ಅಂಕಗಣಿತದ ಸಮಸ್ಯೆಗಳನ್ನು ಬಿಡಿಸುವಾಗ ಸುಲಭವಾಗುತ್ತದೆ.

- ಪರಿಕಲ್ಪನೆಗಳು ಹಾಗೂ ಕೌಶಲ್ಯಗಳನ್ನು ಬೋಧಿಸುವಾಗ ಸಾಕಷ್ಟು ಉದಾಹರಣೆಗಳ ಮೂಲಕ ಬೋಧಿಸಬೇಕು. ಆಗ ಮಾತ್ರ ವಿದ್ಯಾರ್ಥಿಗಳು ಜೀವನದ ಸನ್ನಿವೇಶಗಳಿಗೆ ಆ ಪರಿಕಲ್ಪನೆಗಳ ಅನ್ವಯಿಕತೆಯನ್ನು ಅರ್ಥಮಾಡಿಕೊಳ್ಳಲು ಸಾಧ್ಯವಾಗುತ್ತದೆ.
- ಧನಾತ್ಮಕ ವರ್ಗಾವಣೆಯನ್ನು ಹೆಚ್ಚಿಸಬೇಕಾದರೆ ಯಾವುದೇ ವಿಷಯದ ಸಾಮಾನ್ಯ ತತ್ವಗಳನ್ನು ಅರ್ಥ ಮಾಡಿಸಲು ಶಿಕ್ಷಕನು ಪ್ರಯತ್ನಿಸಬೇಕು. ಸಾಮಾನ್ಯ ತತ್ವಗಳನ್ನು ಅರ್ಥಮಾಡಿಕೊಂಡಾಗ ಮಾತ್ರ ಅವರು ಆ ಜ್ಞಾನವನ್ನು ಇನ್ನೊಂದು ಸನ್ನಿವೇಶಕ್ಕೆ ವರ್ಗಾಯಿಸಬಲ್ಲರು.

**ಸೂಕ್ತ ಬೋಧನಾ ವಿಧಾನಗಳ ಬಳಕೆ : Usage of Proper Methods of Instruction**

1. ಧನಾತ್ಮಕ ವರ್ಗಾವಣೆಯನ್ನು ಹೆಚ್ಚಿಸಲು ಬೋಧನಾ ವಿಧಾನಗಳಲ್ಲಿ ಸೂಕ್ತ ಮಾರ್ಪಾಡುಗಳನ್ನು ಮಾಡಿಕೊಳ್ಳಬೇಕಾಗುತ್ತದೆ.
2. ತರಗತಿಯಲ್ಲಿ ಕಲಿಸಬೇಕಾದ ತಾತ್ವಿಕ ಅಂಶಗಳನ್ನು ಪ್ರಯೋಗಗಳ ಮೂಲಕ ಸಮನ್ವಯಗೊಳಿಸಬೇಕು.
3. ಬೋಧನೆಯಲ್ಲಿ ಸಹ ಸಂಬಂಧದ ತತ್ವವನ್ನು ಅನುಸರಿಸಬೇಕು,
4. ಎರಡು ಸನ್ನಿವೇಶಗಳಲ್ಲಿರುವ ಸಮಾನ ಮೂಲಾಂಶಗಳನ್ನು ಗುರ್ತಿಸಿ, ಅವುಗಳಿಗೆ ಸಂಬಂಧ ಕಲ್ಪಿಸಬೇಕು.
5. ಕಂಠಪಾಠ ರೀತಿಯ ಕಲಿಕೆಯನ್ನು ಯಾವತ್ತೂ ಪ್ರೋತ್ಸಾಹಿಸಬಾರದು. ವಿದ್ಯಾರ್ಥಿಗಳು ಅರ್ಥಪೂರ್ಣವಾಗಿ ಮತ್ತು ಒಳನೋಟಗಳ ಮೂಲಕ ಕಲಿಯಲು ಪ್ರೋತ್ಸಾಹಿಸಬೇಕು.

6. ಬೋಧನೆಯಲ್ಲಿ ಸೂಕ್ತ ಬೋಧನೋಪಕರಣಗಳನ್ನು ಬಳಸಿಕೊಳ್ಳುವ ಮೂಲಕ ಕಲಿಕೆಯನ್ನು ಹೆಚ್ಚು ಆಸಕ್ತಿದಾಯಕವನ್ನಾಗಿ ಮತ್ತು ಪರಿಣಾಮಕಾರಿಯಾಗಿರುವಂತೆ ಮಾಡಬೇಕು

7. ಸಮಸ್ಯಾ ಪರಿಹಾರ ವಿಧಾನ, ಚರ್ಚಾ ವಿಧಾನ, ಯೋಜನಾ ವಿಧಾನ, ಪ್ರಾಯೋಗಿಕ ವಿಧಾನ ಮುಂತಾದವುಗಳನ್ನು ಬಳಸಿಕೊಂದು ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಸ್ವಯಂ ಕಲಿಕೆಗೆ ಅವಕಾಶ ಮಾಡಿಕೊಡಬೇಕು.

8. ಕಲಿತ ವಿಷಯಗಳನ್ನು ವಿವಿಧ ಸನ್ನಿವೇಶಗಳಲ್ಲಿ ಉಪಯೋಗಿಸುವ ಅವಕಾಶಗಳನ್ನು ಕಲ್ಪಿಸಬೇಕು.

9.ಉತ್ತಮ ಆದರ್ಶಗಳು ಮತ್ತು ಅಪೇಕ್ಷಿತ ಮನೋಧೋರಣೆಗಳನ್ನು ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಬೆಳೆಸಬೇಕು. ಪ್ರಾಯೋಗಿಕ ಸನ್ನಿವೇಶಗಳು ಮತ್ತು ಸೂಕ್ತ ಅನುಭವಗಳ ಮೂಲಕ ಉತ್ತಮ ಆದರ್ಶಗಳನ್ನು ಬೆಳೆಸಬೇಕು. ವಿದ್ಯಾರ್ಥಿಗಳು ಉತ್ತಮ ಆದರ್ಶಗಳು ಮತ್ತು ಅಪೇಕ್ಷಿತ ಮನೋಧೋರಣೆಗಳನ್ನು ತರಗತಿ ಸನ್ನಿವೇಶದಿಂದ ತಮ್ಮ ದೈನಂದಿನ ಜೀವನದಲ್ಲಿ ಬಳಸಿಕೊಳ್ಳುವಂತೆ ಪ್ರೋತ್ಸಾಹಿಸಬೇಕು,

- ಕಲಿಕೆಯ ವರ್ಗಾವಣೆ ಎಂದರೇನು? ಕಲಿಕೆಯ ವರ್ಗಾವಣೆಯ ವಿಧಗಳನ್ನು ಸಂಕ್ಷಿಪ್ತವಾಗಿ ವಿವರಿಸಿ.
- What is Transfer of Learning? Explain the types of Transfer of Learning.
- ಕಲಿಕಾ ವರ್ಗಾವಣೆಯ “ಸಾಮಾನೀಕರಣ” ಸಿದ್ಧಾಂತವನ್ನು ಸಂಕ್ಷಿಪ್ತವಾಗಿ ವಿವರಿಸಿ.
- Explain the Theory of Generalizations of Transfer of Learning.

- ಥಾರ್ನ್ಡೈಕ್‌ರವರ ಸಮಾನ ಮೂಲಾಂಶಗಳ ಸಿದ್ಧಾಂತವನ್ನು ಸೂಕ್ತ ಉದಾಹರಣೆಗಳೊಂದಿಗೆ ವಿವರಿಸಿ.
- Explain the Thorndike's Theory of Identical elements with suitable examples.

- **ಕಲಿಕೆಯ ವರ್ಗಾವಣೆಯ ಅರ್ಥ ಮತ್ತು ಮಹತ್ವವನ್ನು ತಿಳಿಸಿರಿ.**
- **Mention the meaning and importance of Transfer of Learning.**

- ತರಗತಿಯ ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಕಲಿಕೆಯ ವರ್ಗಾವಣೆಯನ್ನು ಹೆಚ್ಚಿಸುವ ವಿಧಾನಗಳನ್ನು ವಿವರಿಸಿ.
- Explain the measures to maximize the transfer of Learning in the classroom.

**e. Information Processing Theory –**

*** Atkinson – Schifrin,**

*** Robert Gagnes Models.**

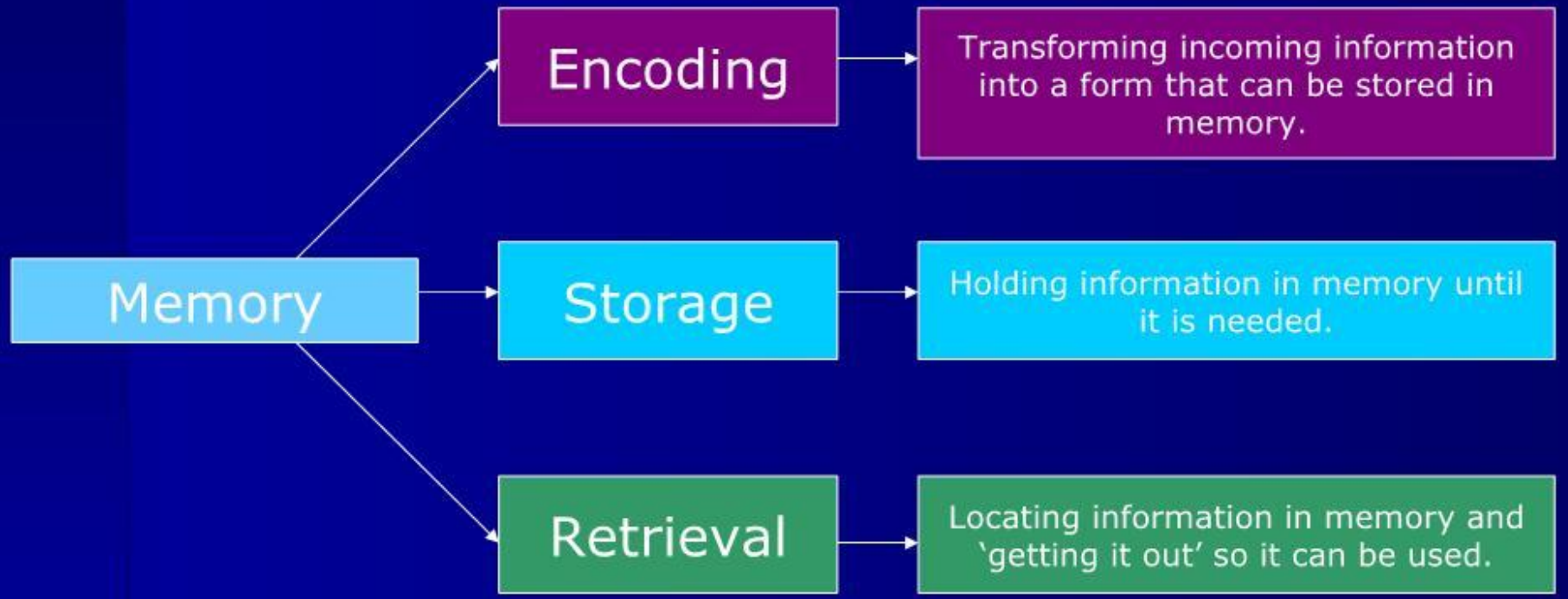
*** Approaches Behaviouristic Views,**

*** Cognitivist Views**

- Most current efforts to understand human memory have been conducted within a framework known as the information processing approach.
- The act of remembering requires the successful retrieval, **the first process encoding,** involves transforming information into a form that can be stored in memory.
- Sometimes we encode information automatically, without any effort, but often we must do something with the information in order to remember it.
- **The second memory process, Storage,** involves keeping or maintaining information in memory. For encoded information to be stored, some physiological changes in the brain must take place- a process called consolidation.
- **The final process, retrieval** occurs when information stored in memory is brought to mind. To remember, we must perform all three processes - encode the information, store it and then retrieve it. Memory failure can result from the failure of any one of the three.

# Memory

- Psychologists believe that the process of memory involves three stages.



*ಸಂಕೇತಿಕರಣ (ENCODING) - ಪಡೆದುಕೊಂಡ ಮಾಹಿತಿಯನ್ನು ಸ್ಮೃತಿಯಲ್ಲಿ ಸಂಗ್ರಹಿಸಿಟ್ಟುಕೊಳ್ಳುವ ರೂಪಕ್ಕೆ ವರ್ಗಾಂತರಿಸುತ್ತದೆ.

*ದಾಸ್ತಾನು ಮಾಡುವಿಕೆ (STORAGE) ಸ್ಮೃತಿಯಲ್ಲಿ ಮಾಹಿತಿಯನ್ನು ಸಂಗ್ರಹಿಸಿಟ್ಟುಕೊಳ್ಳುವಿಕೆಯನ್ನು ಒಳಗೊಳ್ಳುತ್ತದೆ.

* ಜ್ಞಾಪಿಸಿಕೊಳ್ಳುವಿಕೆ (RETRIEVAL) – ಸ್ಮೃತಿಯಲ್ಲಿ ಸಂಗ್ರಹಿಸಿಟ್ಟುಕೊಂಡಿರುವ ಮಾಹಿತಿಯನ್ನು ಬಳಸಿಕೊಳ್ಳಲು ಮನಸ್ಸಿಗೆ ತಂದುಕೊಳ್ಳುವ ಪ್ರಕ್ರಿಯೆ,

# Encoding

- In every situation your brain has to process all the information you receive.
- Information is changed so that we can make sense of it. This process is known as encoding.
- Encoding is the process of representing an item in some form in the memory; it may be in the form of a "sound" heard in the mind, a "picture" seen in the mind or a "meaning" held in the mind.
- Imagine you have called directory enquires for a telephone number. As the recorded voice tells you the number ("the number you require is ….") can you think how you keep it in your memory whilst writing it down?

- Most people say it over to themselves until they have written it down. This is an example of encoding the information. In this case, it is encoded in the form of a sound. You "hear" your voice in your head whilst you repeat it.
- Psychologists often refer to this as **acoustic encoding**.

# Storage

- The information that has been encoded is then stored so that it is available for use sometime in the future.
- We store different types of information in different ways.

# Retrieval

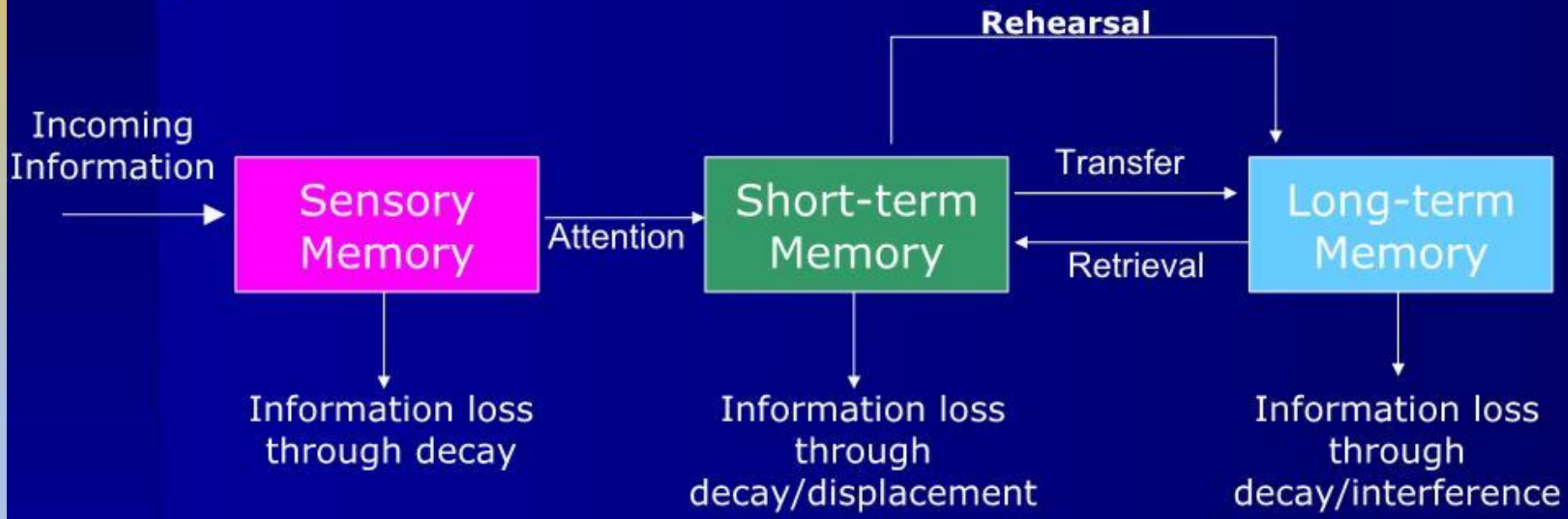
- Having encoded information and stored it we need to be able to get it out again, to **retrieve** it.
- If we can't remember something it might be because we are unable to retrieve it, e.g. when you enter a room and can't remember why you went in there, but when you retrace your steps, you remember.
- Sometimes we really think we have forgotten something, such as how to do something on the computer, but when someone shows us how we remember the whole sequence easily. This is called **re-learning**, in which we need a little extra help to remember completely.

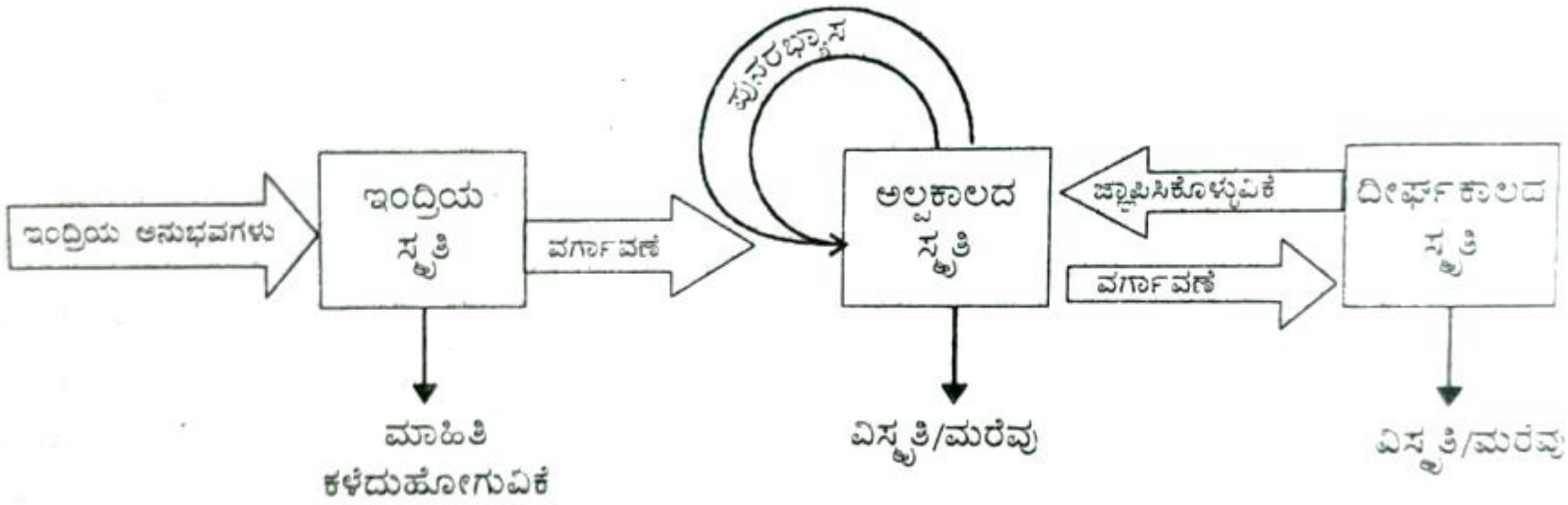
# Definition

Memory is the mental process involved in **coding**, **storing** and **retrieving** information.

# Models of Memory

- R. Atkinson and R. Shiffrin (1968) proposed that our memories are not just stored in one place but actually memory consists of several 'stores'.
- Memory is made up of a series of parts, working together as a process.






ಚಿತ್ರ : ಮಾಹಿತಿ ಸಂಸ್ಕರಣೆಯ ಮಾದರಿ (ಆಟ್ಕಿನ್‌ಸನ್ – ಶಿಫ್ರಿನ್, 1968)

# Capacity of STM

- Most people can remember about 7 numbers
- Many experiments have shown that 7 plus or minus 2 items of information seems to be the 'magic number' in short term memory
- Short term memory can on average hold between 5 and 9 items of information.

ಅಲ್ಪಕಾಲದ ಸ್ಮೃತಿಯಲ್ಲಿ ಮಾಹಿತಿಯ ವರ್ಗಾವಣೆ ಈ ಕೆಳಕಂಡ ರೀತಿಯಲ್ಲಿ ನಡೆಯುತ್ತದೆ.

(1) ಆಯ್ದ ವಿಷಯಗಳ ಅವಧಾನ (SELECTIVE ATTENTION)

(2) ಸಂಕೇತಿಕರಣ (ENCODING)

(3)ಧಾರಣೆ ಮತ್ತು ಪುನರಾಭ್ಯಾಸ(RETENSION AND REHEARSAL)

(4)ಅಲ್ಪಕಾಲದ ಸೃತಿಯಿಂದ ಜ್ಞಾಪಿಸಿಕೊಳ್ಳುವಿಕೆ (RETRIEVAL FROM STM)

# Capacity of LTM

- LTM contains vast amounts of information so it is not possible to measure its capacity.
- Most psychologists would agree that there is no upper limit – we are always capable of learning more.

# Duration of STM

- Short-term memory is called short term because information is kept there for a short time.
- When you carried out your rehearsal task you could see that without rehearsal the words were forgotten very quickly.
- It is thought that information is kept in STM for around 15 to 30 seconds.

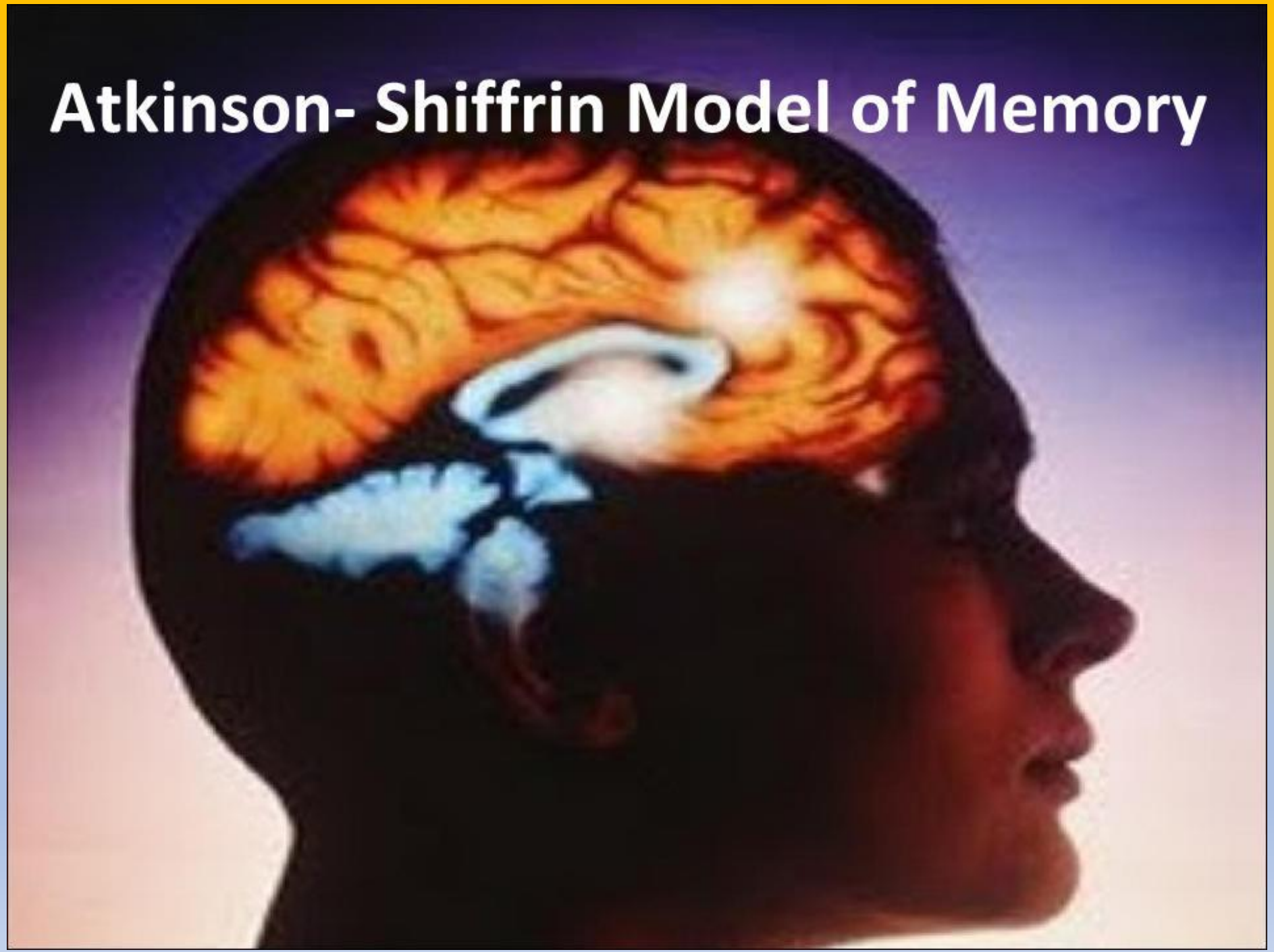
# Duration of LTM

- The duration of LTM seems only to be limited by the length of human life.
- Many people in their old age can readily recall events from their childhood.
- Some items last for a few minutes (just long enough to be LTM), some for a few hours, some for a few days, months, years or a whole lifetime.
- Information in LTM does not need to be rehearsed to be remembered.

# Encoding in STM and LTM

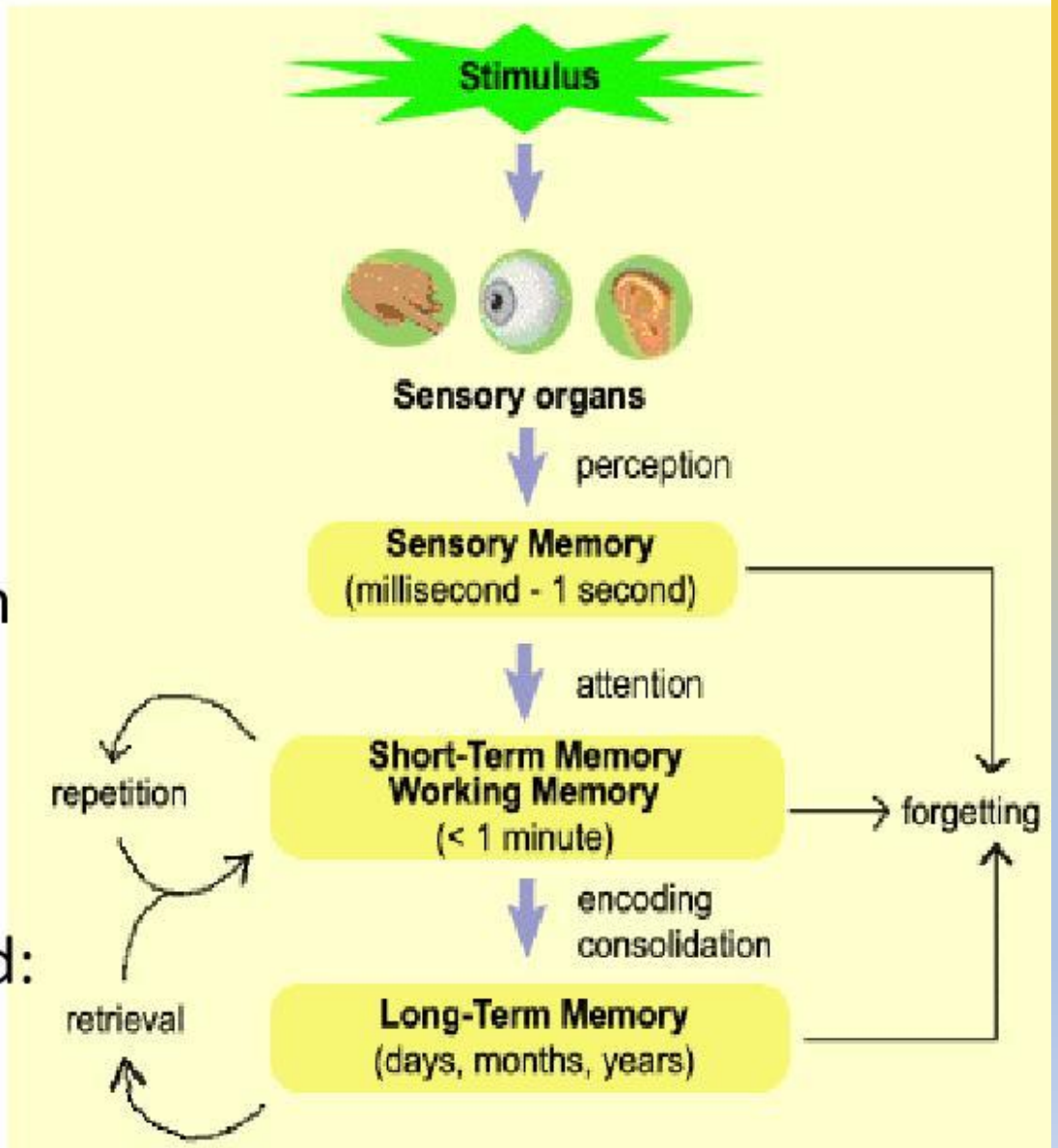
- It appears that STM and LTM make use of all three types of encoding.
- However it has been noted that they each rely on one type the most heavily.
- Baddeley carried out a study to identify the type of encoding that each type of memory relies on the most.
- Read the research on your worksheet and answer the questions that follow to identify which type of encoding is primarily used by which type of memory.

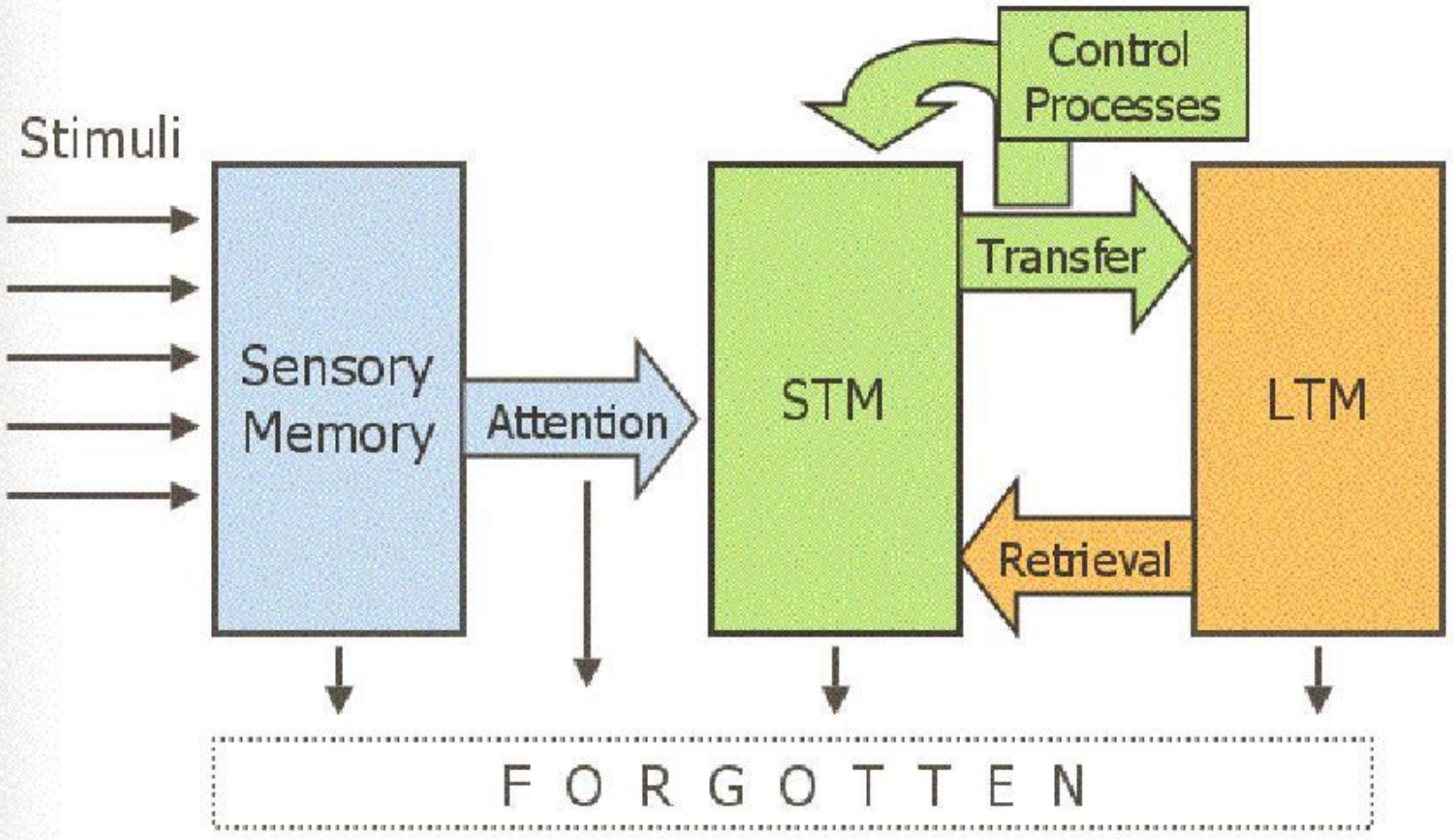
# Atkinson- Shiffrin Model of Memory



# Multi Store Model of Human Memory

- In 1968 Atkinson and Shiffrin proposed a model of human memory which posited two distinct memory stores: short-term memory, and long-term memory.
- Later a third memory store (actually the first in sequence) was added: sensory memory.




Stimuli
Sensory Memory
Attention
STM
Control Processes
Transfer
LTM
Retrieval
FORGOTTEN

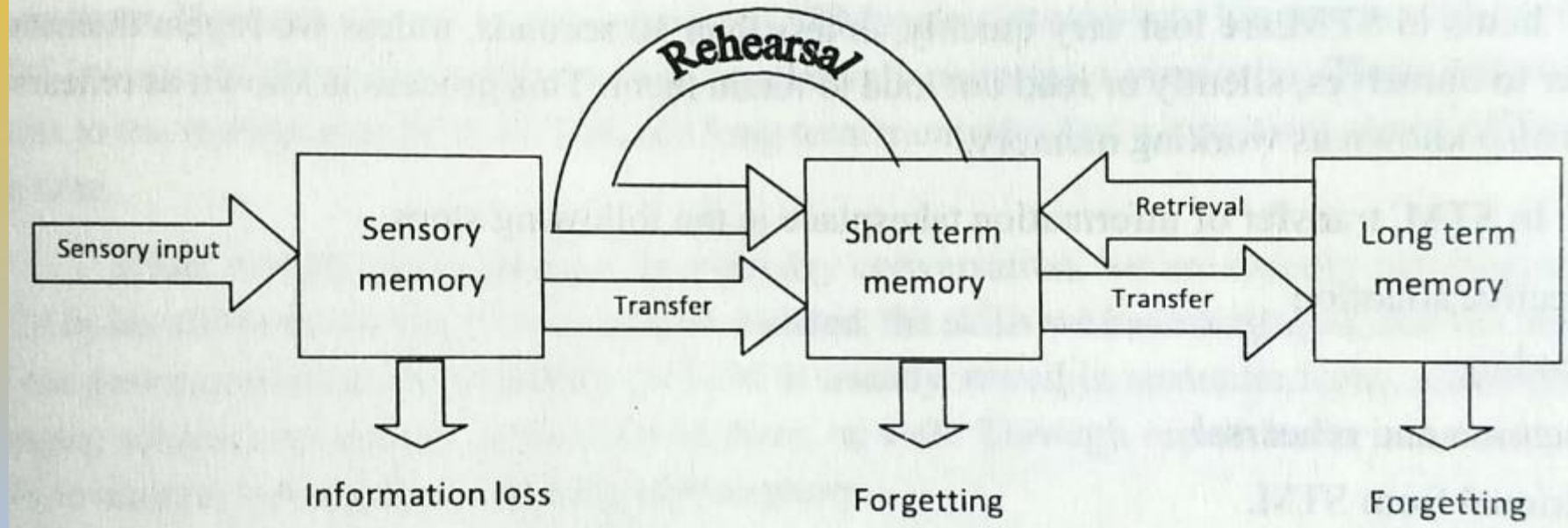
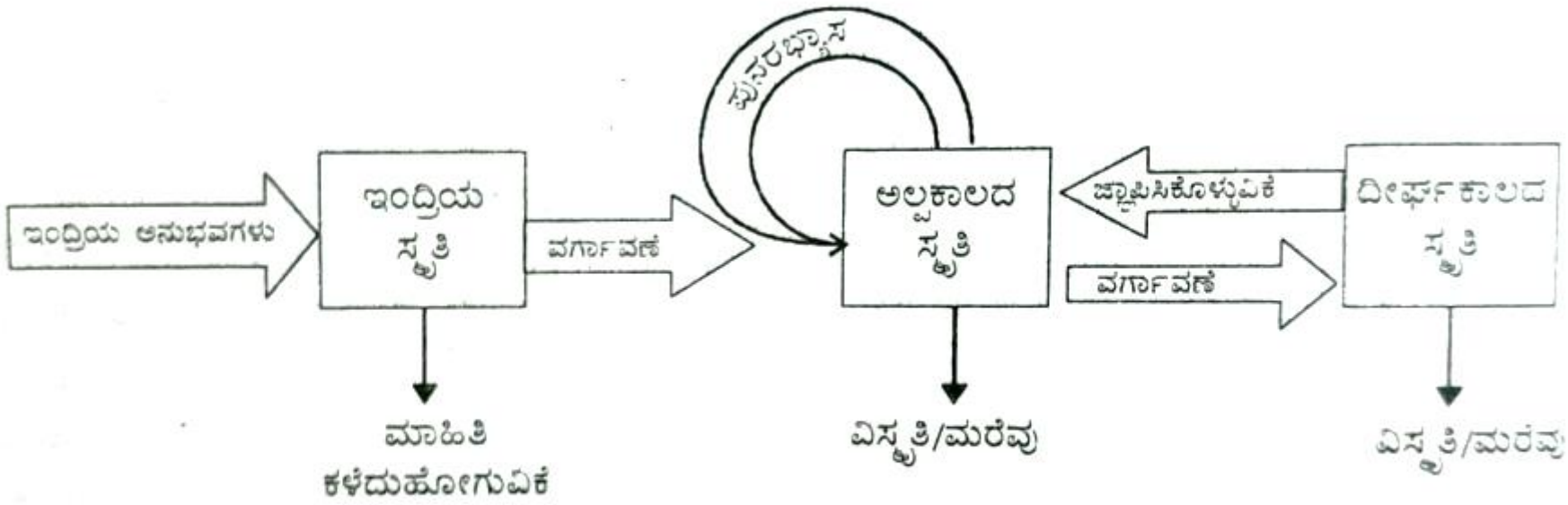
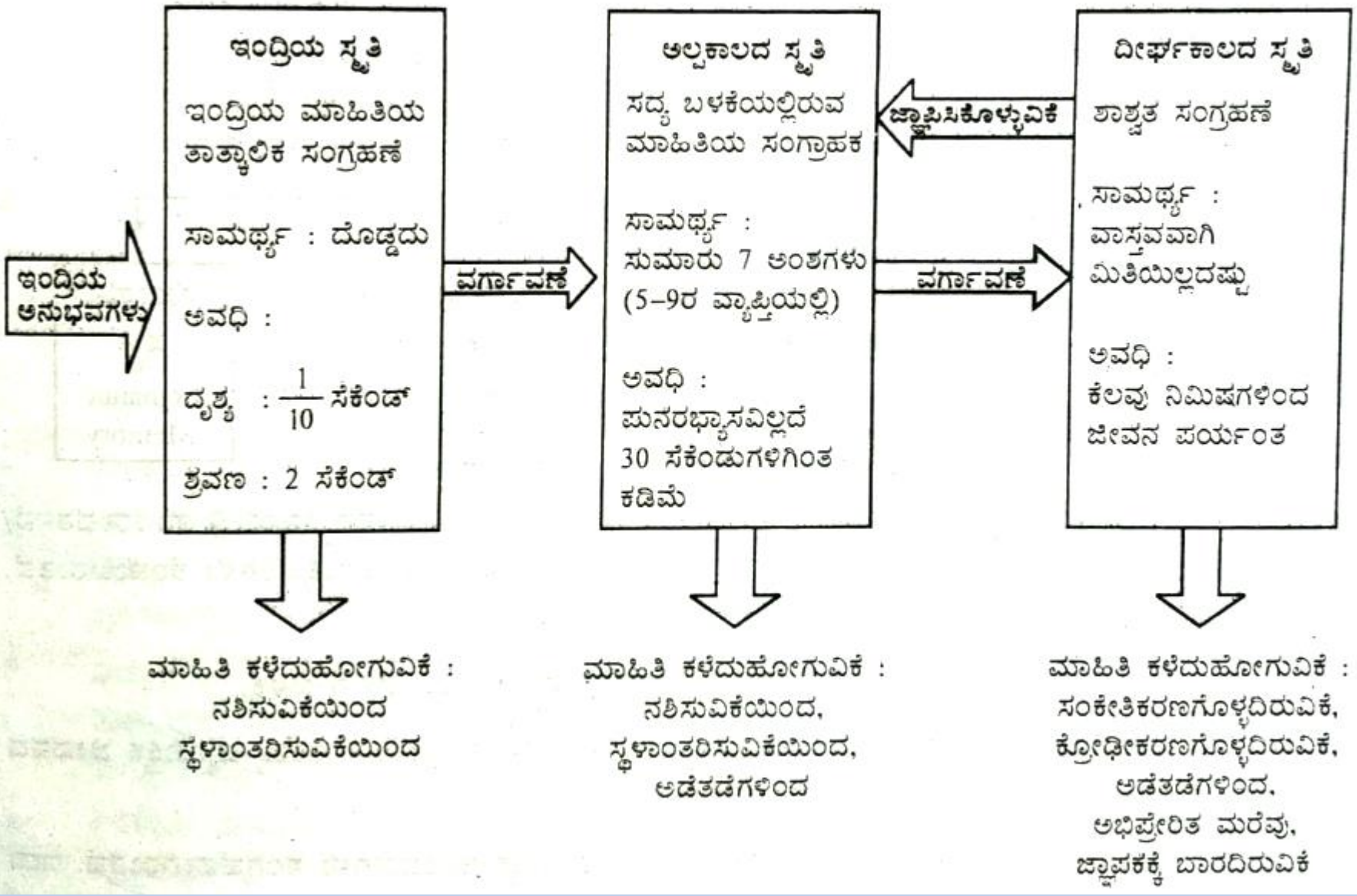


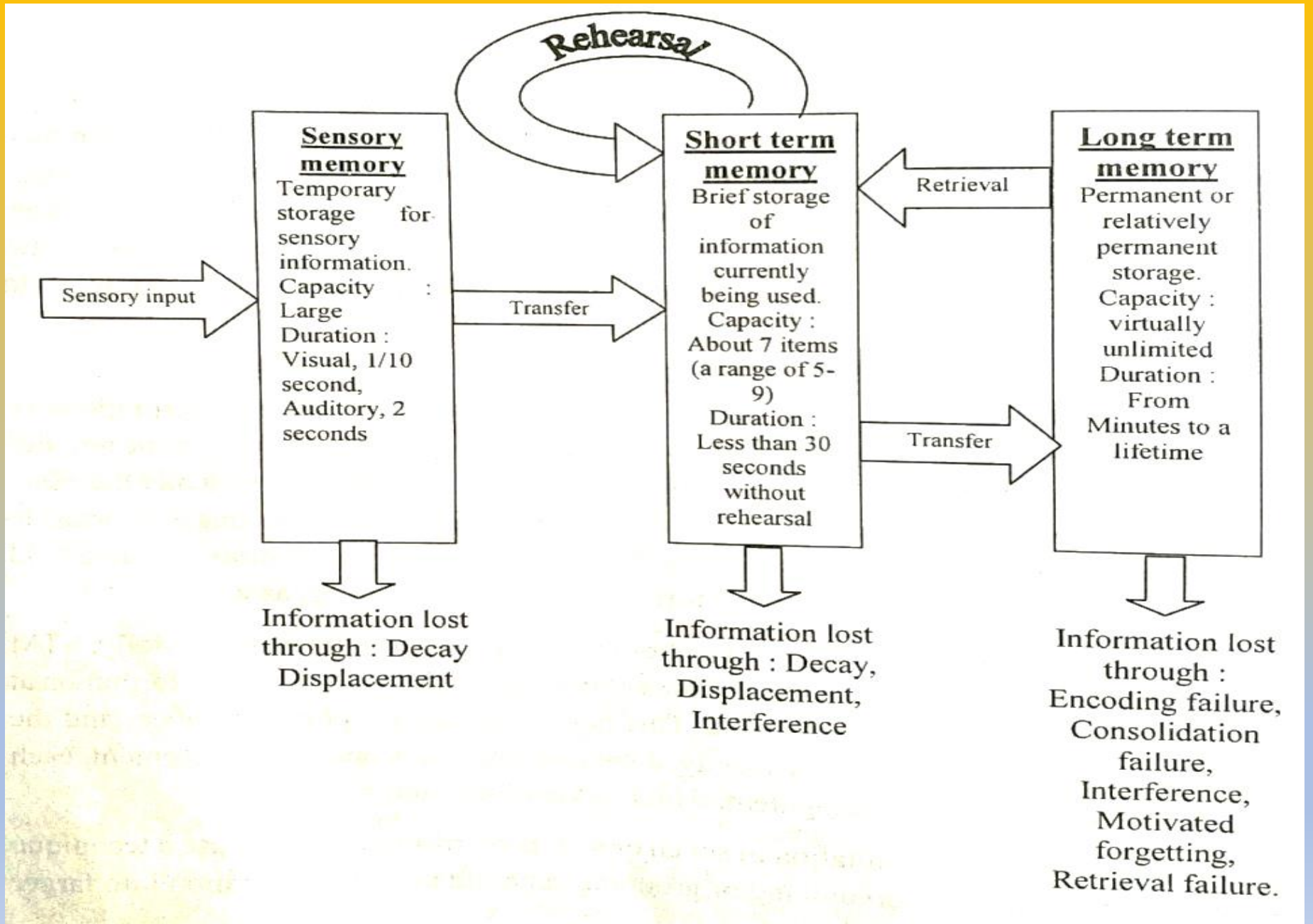

**Fig. Information processing model (Atkinson-Shiffrin, 1968)**




ಚಿತ್ರ : ಮಾಹಿತಿ ಸಂಸ್ಕರಣೆಯ ಮಾದರಿ (ಆಟ್ಕಿನ್‌ಸನ್ – ಶಿಫ್ರಿನ್, 1968)

# ಸ್ಮೃತಿಯ ಮೂರು ವಿಧಗಳು ಒಳಗೊಳ್ಳುವ ಪ್ರಕ್ರಿಯೆಗಳು ಮತ್ತು ಲಕ್ಷಣಗಳು

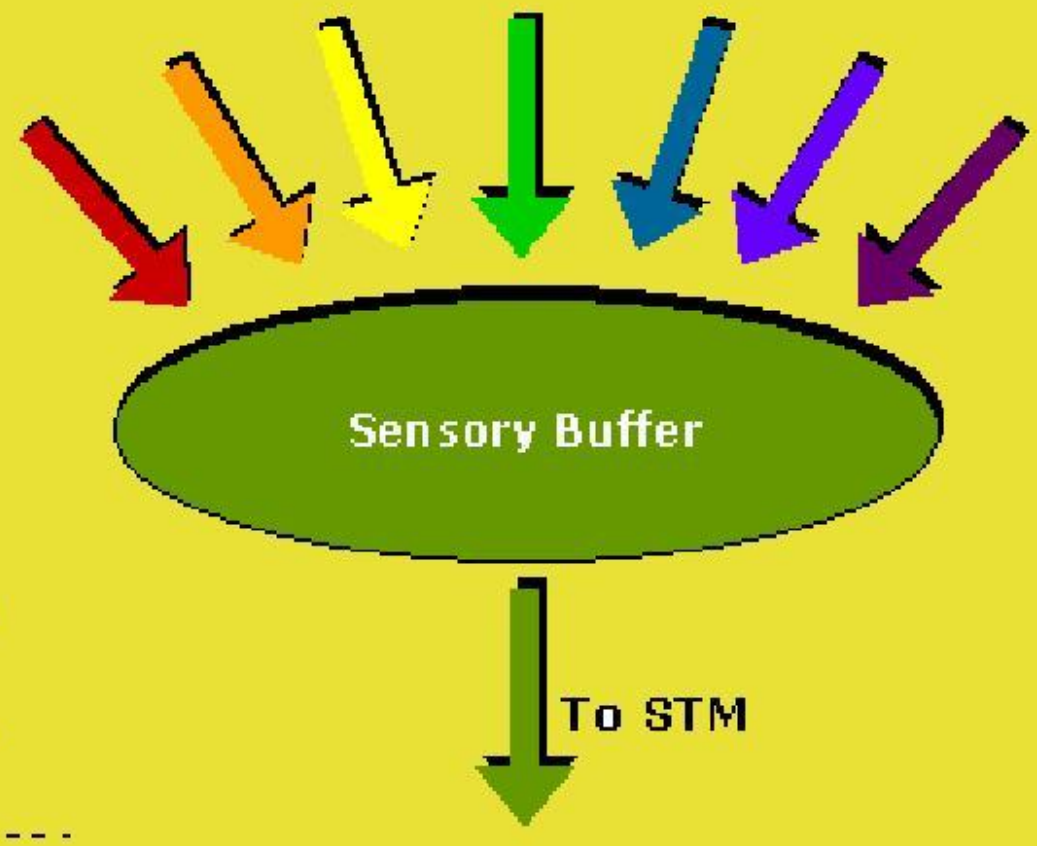


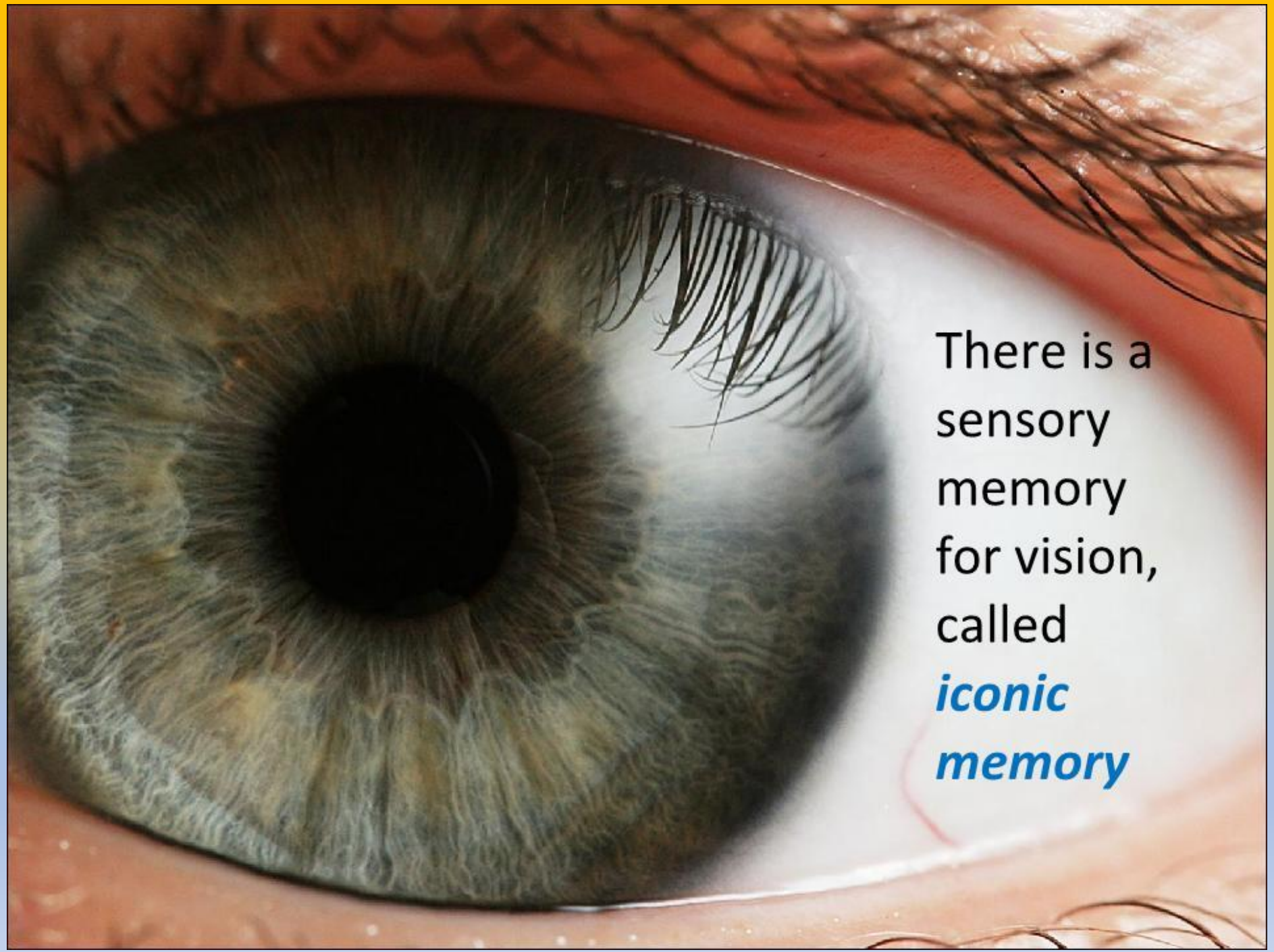

Rehearsal
Sensory memory
Temporary storage for sensory information.
Capacity : Large
Duration : Visual, 1/10 second, Auditory, 2 seconds
Sensory input
Transfer
Short term memory
Brief storage of information currently being used.
Capacity : About 7 items (a range of 5-9)
Duration : Less than 30 seconds without rehearsal
Retrieval
Long term memory
Permanent or relatively permanent storage.
Capacity : virtually unlimited
Duration : From Minutes to a lifetime
Transfer
Information lost through : Decay Displacement
Information lost through : Decay, Displacement, Interference
Information lost through : Encoding failure, Consolidation failure, Interference, Motivated forgetting, Retrieval failure.

- Information enters the human information processing system via a variety of channels associated with the different senses.

# Sensory Memory

- Information not immediately attended to is held briefly in a very temporary "buffer" memory, making it possible to attend to some of it a bit later.
- This buffer memory is called **sensory memory**.




There is a sensory memory for vision, called
iconic memory


One for audition (hearing), called *echoic memory*.


• And one for touch-
haptic memory

## Iconic Memory (vision)

- Capacity: Essentially that of the visual system
- Duration: About 0.3 to 1.0 seconds
- Processing: None additional beyond raw perceptual processing

## Echoic Memory (hearing)

- Capacity: ????
- Duration: About 3-4 seconds
- Processing: None additional beyond raw perceptual processing

- **Haptic memory** is a form of sensory memory that refers to the recollection of data acquired by touch after a stimulus has been presented. Similar to visual iconic memory, traces of haptically acquired information are short lived and prone to decay after approximately two seconds.

# Short Term Memory

Information that is attended to arrives in another temporary store called **short-term or working memory.**

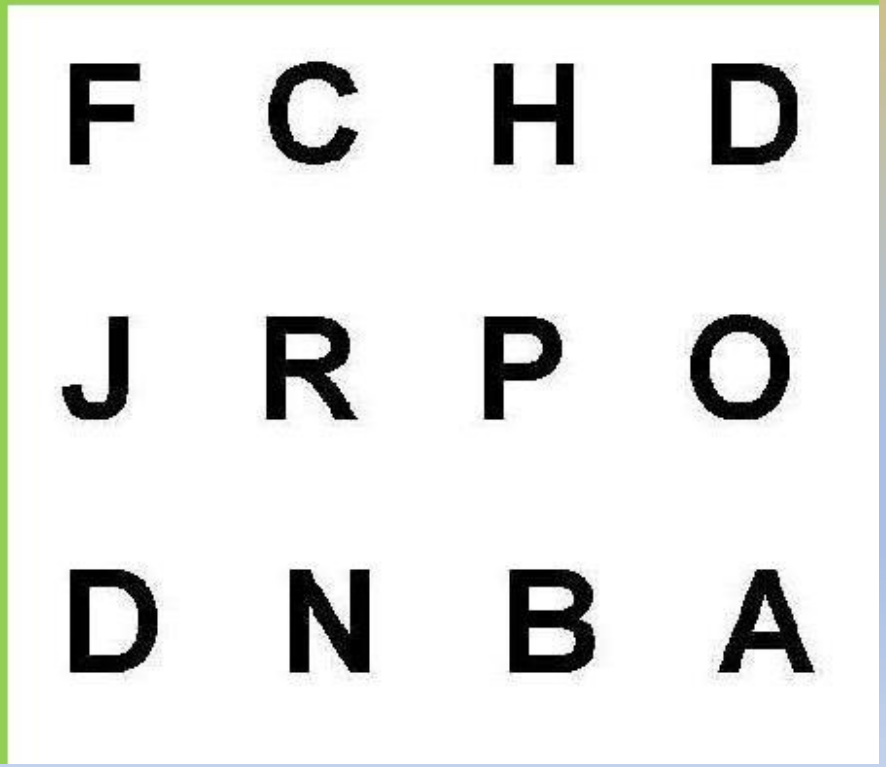
# Some properties of STM:

- Capacity: About 7 plus or minus 2 "chunks" of information.
- Duration: About 18-20 seconds (average).
- Processing: To hold information in STM, it is often encoded verbally, although other strategies may also be used such as visualisation. These strategies make it possible to "rehearse" the information.

- The low capacity of STM was first noted by George Miller in a famous paper entitled *The Magical Number Seven, Plus or Minus Two.*


- Miller concluded that about seven (plus or minus two) "chunks" of information could reside in STM simultaneously.

Random letters such as "GJK" would each be considered a chunk, but letters that form a recognisable larger whole, such as "CAR" would not. (In this case the word "car" is a single chunk.)



- Information is STM can be held for a duration of being 18 and 20 seconds provided there isn't ***interference-*** that is new, information interfering with the currently attended to information.

- Information in STM can be held in STM via a method called maintenance rehearsal- that is, repeating the information silently or aloud so that it is recalled immediately when needed.

- Maintenance rehearsal does NOT add meaning to the information and is unlikely to be remembered when it is no longer being repeated.

# Long Term Memory

- **Long-term memory** is the relatively permanent memory store in which you hold information even when you are no longer attending to it.

- Information held in LTM is not represented as patterns of neural activity (as in STM), but rather as changes in brain wiring -- in the "conductivity" of existing synapses, and in the formation new synapses and destruction of old ones.

- Storing information in LTM is equivalent to a computer writing information out to its hard drive, or to a tape recorder writing patterns of magnetisation onto tape to record music.

# Some properties of LTM:

- Capacity: Virtually unlimited
- Duration: Up to a lifetime
- Processing: Information is organized according to *meaning* and is associatively linked.

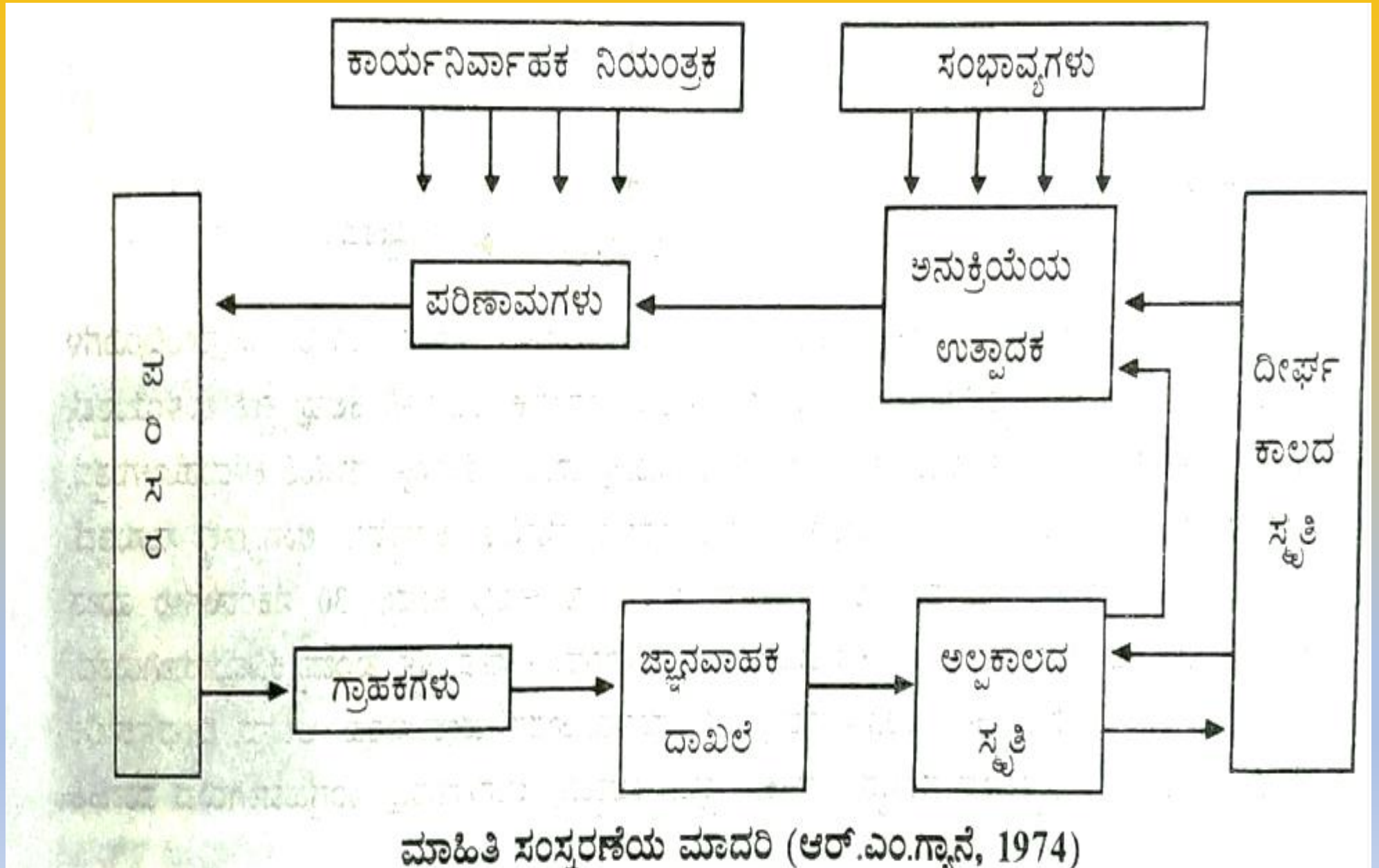
In contrast to maintenance rehearsal in STM, elaborative rehearsal involves the process of expanding upon new info by adding to it or linking it to what one knows, thereby making it more meaningful (for encoding and retrieval).

# Self referencing/ Salience

- Self-referencing, or using salience, is when we relate new info to personal experiences and our personal situation, encoding is enhanced and therefore we are more likely to remember it.

# Example of using salience:

- Suppose that some psychology students are learning about different symptoms of depression and are informed that one symptom is a feeling of pessimism about the future.
- Some students may wonder whether their own pessimism means that they are depressed.
- Unknowingly, these students are using self-referencing to process this new info they are learning.
- Consequently, they will be more likely to remember pessimism as one of the indicators of depression




ಮಾಹಿತಿ ಸಂಸ್ಕರಣೆಯ ಮಾದರಿ (ಆರ್.ಎಂ.ಗ್ಯಾನೆ, 1974)


Thank You!!!