Maximizing the Use of Memory for Optimal Academic Performance Among Students of Senior Secondary Schools in Kebbi State

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Abstract— The thrust of this paper is to explain the theoretical concept of memory as it affects our ability to learn, store and retrieve information. The three main processes of memory and their functions were adequately elaborated. Another important question for the teacher is why do students forget? The fact that a material has been learnt is meaningless if the student is unable to recall what he has learnt. The major reasons why students forget was critically examined. Similarly, procedures that will help the teacher to promote remembering among students were outlined. Finally, conclusion and recommendations were provided.

Keywords— optimal academic performance, memory, senior secondary, kebbi state.

INTRODUCTION

The thrust of this paper is to explained the theoretical concept of memory as its relates to learning, storage of information and retrieval. Memory is the power house of learning: it is the brain box of human living progress & activities. Without memory, we cannot store information, we cannot remember, we cannot think, learn or solve problems.

But with the use of memory, we are able to remember, think, learn and store revision information and recall them when needed. We can also think and solve problems. The information we store in our memory influence new learning. To be effective, the teacher must acquaint himself with the way the memory functions. He must find out why children forget and try to stop it. The teacher should consciously teach how to promote effectives storage of information.

Major Processes of Memory Storage

There are three (3) main processes of memory:

The first process is the acquisition or encoding stage during which the learner takes in or assimilates the material to be learned. The second process is the storage stage where the learner stores what is acquired from the first stage. Finally, there is the retrieval stage there the learner recalls the information when needed.

Table 1: *Memory Information Processing Model*

Senses of Sight, Smell, Sound and Touch	**Sensory Memory**	**Short Term Memory Recall or rehearsal**	**Long Term Memory Recall or rehearsal**
	Momentary Storage	Attention Recognition	Permanent Store
	Very Limited Capacity	Very Brief Storage	Unlimited Capacity
	Information is Lost after1 t0 3 seconds If not processed	Limited Capacity Information is lost if not processed after 20 sec.	

The Information Processing Model of Memory (Adapted from 1986 Dennis Child, Psychology and the Teacher, London, Cassell).

1. The Sensory Memory

This is called the sensory register; this is the first store in the system. Immediately we experience a sensation it goes into the sensory memory. The sensory memory holds the information long enough 3 to 5 seconds for us to decide whether to attend to it a not. If we don't attend to it and recognize it, it gets lost and disappears, but if we attend to it and recognize it, it is then moved to the next level of memory for further processing. The two processes that determine whether or not information in the sensory meaning is processed further are not.

The attention and recognition are both controlled by the nature of the information itself (e.g Familiar, meaningful

or related to previous knowledge etc) and related to past experience (e.g pleasure interesting etc.)

2. The Short Term Memory (STM)

Information last larger in the short term then in the sensory memory. It can hold information for approximately 20 seconds. It has limited amount of information it can store. It holds information for immediate use and foe further processing into long term memory. Information not processed within 20 sec disappears. This problem can be dealt with through rehearsal.

Rehearsal is the repetition of information to oneself. It may be of immediate use as when you chant a telephone number to yourself while dialing the telephone. You keep chanting it so that you remember it while your dialing last as soon as you finish dialing you forget

Apart from rehearsal for temporary use, we may also rehear information so that we don't forget it. To do this, we link the material to be learnt with our previous knowledge already stored in the long term memory. We do this by using some devices. For example, to remember days of the month, we learn the rhymes "thirty days has September''

3. Long Term Memory (LTM)

This memory has unlimited capacity for storing information. It is also relatively a permanent store. Information in LTM does not disappear. It enables us recall memories from long ago. All the knowledge, skills, interest and attitudes of this world and of ourselves are stored in the long-term memory. The LTM is organized in terms of professional episode and schemata. It is like our diary or autobiography.

The individual classify in-coming information according to an existing "scheme or 'format' in his memory. Such scheme or 'pictures' determine the degree to which learner attend to and understand new information; how much information is recalled and how accurately it is recalled.

In general, human being process information very systematically. One ability to understand and recall what we experience largely depends on how much information we are made to deal with at one time.

- ***Reasons why we Forget***

A very important question for the teacher is why do we forget? The fact a child has learnt something is meaningless if he's unable to recall what he has learnt. The teacher would get disturbs as he knew that his effort has been ineffective. Below are the major reasons why we forget.

- ***Lack of Attention***

Information will not be processed into the STM, if it is not attended to, it will disappear as a result of not being processed.

- ***Too much information at a time***

The sensory memory and STM both have limited capacity for storing and processing of information. Our ability to understand and recall largely depends on how much information we deal with at a time. Whenever pupils are given too much work at a time, only part of it can be assimilated.

Poor Rehearsal: when learning material is not well rehearsed. It cannot move from the STM to LTM. Similarly, material in the LTM will be difficult to retrieved if it is not used for along tem.

- ***Poor Organization***

When children are made to learn disjointed facts or unrelated materials, they easily get confused and enable to organize it into the scheme they already have in their LTM. At the time of recall they are likely to find it difficult But when learning material is well organized recalling will be greatly enhanced.

- ***Serial Position Effect***

It has been found that when we attempt to recall a list of words, we begin by recalling words at the end of the list that is those more recently presented and then proceed at the beginnings of the list.

The word in the middle of the list are weekly to be forgotten. This is because the early items were better encoded or rehearsal and are more likely to be stored in the LTM. Furthermore, the item from the end of the list are well recalled because they occurred so recently that they may still reside in the short term memory

- ***Procedures to Promote Remembering:***

Remembering is the recall of learned material already stored in the memory. We cannot remember what has not been learnt and stored. Below are ways to promote remembering.

- Attract and hold the attention of the pupil
- Vary your voice, gestures, body motions and expressions from time to time.
- Highlight the importance and usefulness of the learning material to the present and future times of the pupils.

- Use attractive (coloured) chalk to emphasize important points written on the board.
- Train the children to make listening and observation a habit.
- Use rehearsal teaching to improve short term meanings.

The teacher should simplify learning by breaking tasks into small, easy – to- manage pieces. This technique can be useful in minimizing the serial position effect in forgetting. When along list is broken down into short term lists, we eliminate the hard- to- memerize middle ground.

- ***Helps the child to discover the way his memory works.***

Children memory performance may be improved by helping them understand how rehearsal, imagery, verbal elaboration and mnemonics devices contributes to effective learning. Children should practice using this technique and find which of them suits them basic.

Minimize the possibility of interference. Interference learning can impede memory and therefore, recall. interference can be checked by making the original and later learning more meaningful. Makes clear distinction and enough discriminator between material interfaces.

- ***Create a conducive learning circumstance***

The emotional and national state of the child at the time of learning can either facilitate or interface with the recall of such material. A worried child will find it difficult to recall what he has learnt. The learning environment should therefore be warm, loving, pleasant and interesting. Through proper and regular revision we can reduce the tension that often accompany the onset of examination.

- ***Previous unpleasant experience***

Previous experience recorded in the long term memory influences the recall of information. Painful or sad memories or events are though in the LTM, prevented from coming into our consciousness. This is so because their recall would cause us strong feelings of guilt and anxiety. This is called motivated forgetting or repression.

Finally, each individual needs to know how his memory functions as this is very useful in knowing what memory strategies can be most efficient.

DISCUSSION

Sensory memory differs according to the kind of sensory information, and the sensory memory is thought of as several types of sensory memories based on the sources of sensory messages. Visual sensory memory is called iconic and its source is the visual sensory system, and auditory sensory memory called echoic memory its source is the auditory sensory system. Sensory memories are raw information without meaning. In order to transfer to the long - term memory, this sensory memory must be given meaning and placed in short term memory. One view about this memory is that it is composed of verbal representations that have a very short duration. Memory can be held in the short term memory longer by rehearsal ie the repetition of information already in the short term memory. Rehearsal is also the beginning of transfering short term memory to long term memory. The kind of rehearsal influences the effectiveness of the transfer to long term memory. Elaborative rehearsal occurs whenever the material is associated with other information through placement in a logical framework, connection with another memory, the formation of an image, or some other transformation.

An alternative to the three – stage view of memory is the levels of processing theory. This theory suggests that the differences in memories defend on the depth to which a particular information is processed, that is, the degree to which information is analyzed and considered. The more attention information is given, the deeper it is stored and the less likely it is to be forgotten. Superficial aspects of information are given shallow processing, and when meaning is given, the processing is at its deepest level. This approach suggest that memory requires more active mental processing than does the three – stage approach.

CONCLUSION

The study has the following conclusions:

1. The nature of memory suggests that there are several ways information is encoded, stored and later retrieved.
2. There are three major stages of memory, each functions in somewhat different ways
3. Forgetting is an important part of memory, because it allows us to make generalizations and abstractions from daily life.
4. The differences in memory defends on the depth to which particular information is processed, the more attention information is given, the deeper it is stored and the less likely it is to be forgotten.

RECOMMENDATIONS

1. Study repeatedly to boost long - term recall
2. Spend more time rehearsing or actively thinking about the material.

3. Make the material personally meaningful.
4. Refresh your memory by activating retrieval cues
5. Test your own knowledge, both to rehearse it and to help determine what you do not know yet.

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