

## The Significance of Memory in the Teaching/Learning Process (Techniques for Improving Memory)

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“Memory is the diary that we all carry about with us.”  
(O.Wilde “The Importance of Being Earnest”).

Memory is a purposeful activity and it is at the heart of cognitive psychology, the branch of psychology that studies the mental processes and their effects on human behavior. Psychologists usually define memory as knowledge stored in the mind, a storage that is physically implemented somehow in the brain. “Memory is an extremely important cognitive faculty, because it forms the cognitive basis for learning. Without a way of storing mental representations of the past, we have no way of profiting from experience. But more important, memory frees us from the tyranny of perception, allowing behavior to be guided by the past as well as the present” (Kihrlstom 2002).

Memory seems to be a source of knowledge and it is a continuous process. Students need to acquire language knowledge and skills to function day to day. The new information builds on existing knowledge and learners are expected to both learn and demonstrate the mastery of this knowledge. Thus, the role of memory has long been recognized as one of the basic elements of learning and teaching by psychologists, methodologists and teachers. It has been right in the centre of the teaching/learning process. Thus, an effective and efficient memory is critical for students. Memory techniques can facilitate and improve the teaching/learning process.

Before passing on to the study of the memory improving techniques it would be better to turn to the types of memory. Understanding how memory works is the first step to using techniques to improve it. Psychologists talk about different kinds of memory, mainly: short-term memory, working memory and long-term memory.

**Short-term memory**, also known as primary or active memory, is the information we are currently aware of or thinking about. The information found in short term memory comes from paying attention to sensory memories. The amount of information that can be stored in short-term memory can vary. George Miller, a psychologist, suggested that people can store between five and nine items in short-term memory (Miller 1956). More recent research suggests that people are capable of storing approximately four pieces of information in short-term memory. Most of the information kept in short-term memory will be stored for approximately 20 to 30 seconds, but it can be just seconds if rehearsal or active maintenance of the information is prevented. While many of short-term memories are quickly forgotten, attending to this information allows it to continue on the long-term memory (Tulving and Craik 2000).

**Working memory** is often used interchangeably with short-term memory, but the two should be utilized separately. Working memory refers to the processes that are used to temporarily store, organize and manipulate information. Short-term memory, on the other hand, refers only to the temporary storage of information in memory.

**Long-term memory** refers to the continuing storage of information. In Freudian psychology, long-term memory would be called the preconscious and unconscious. This information is largely beyond our awareness, but can be called into working memory to be used when needed. Some of this information is fairly easy to recall, while other memories are much more difficult to access.

Through the process of association and rehearsal, the content of short-term memory can become long-term memory. While long-term memory is also susceptible to the forgetting process, long-term memories can last for a matter of days to as long as many decades. Long-term memory is usually divided into two types declarative (explicit) and procedural (implicit).

Declarative memory includes all of the memories that are available in consciousness. Declarative memory can be further divided into episodic memory (specific events) and semantic memory (knowledge about the world). Declarative knowledge consists of factual knowledge about the world. Episodic memory (also called collective or personal memory) is autobiographical memory for one's own actions and experiences, while semantic memory is more or less generic and abstract, like a mental dictionary, not tied to any particular event. When most people speak of "memory" they mean episodic memory. Episodic memory is the memory for experienced events or episodes, such as the meeting with a person you know. Semantic memory (also called propositional memory or memory for facts) comprises the vast network of conceptual information underlying our general knowledge of the world, remembering for example when Shakespeare was born or died. Thus, episodic memory is one's memory for having a dinner party the previous Sunday, and semantic knowledge is one's knowledge about the party being interesting.

Procedural memory involves memories of the body movement and how to use objects in the environment. How to use a computer is an example of procedural memory, one which comprises a skilled action. It can be further subdivided into cognitive and motor skills. An example of procedural knowledge is one's knowledge of how to drive a car.

Learning a foreign language takes a lot of time and effort. There are three stages that must take place for memory to occur. Stage one is **encoding** or input. In this stage, you pay attention, process information and give it meaning. Stage two is **storage**. During the processing period, the information is held in your mind long enough for it to be stored for later recall. Stage three is **retrieval**, during which the brain recalls the information previously encoded and stored.

There are several levels of memory retention from worst to best:

1. You are able to relearn the known material faster and more easily than new material.
2. You are able to recognize it in a group or list.
3. You are able to remember it if you are given a hint.
4. You can recall it without any help.

If you are able to recognize many words, even at a low memory level, then you are able to talk to native speakers, watch a foreign TV show, or listen to music in the language you are trying to learn. Since these activities are more enjoyable than staring at a vocabulary list for hours on end, you will probably do them more often. Every time you listen to that song or watch that movie you are actually practicing your vocabulary and moving your retention of those words to deeper levels.

Memorizing words this way is also more natural, and words will be learnt in order of their importance. The importance of knowing a word is the frequency it is used in the language. Therefore the more important a word is, the more often you will hear it on TV and in music, and the better you will remember it. It is better to memorize the word once, and let it fall back to the recognition level of memory, because when you hear that word on a TV show or a song, your brain will realize *that* word was important, and it should memorize it better.

It has also been assumed that it is better to memorize a word from hearing native speakers say it in a real situation than to memorize it from a list. So it is better to learn words better and more enjoyably by talking to native speakers and watching foreign movies than from memorizing lists.

Now let us turn to the role memory plays in the teaching/learning process. Very often students' failure in learning is the result of a memory problem. Students who have deficits in registering information in short-term memory often have difficulty remembering instructions they have just been given, what was just said during conversations and class lectures and what they just read. Students who have difficulty with working memory often forget what they are doing while doing it. For example, they may understand the three-step direction they were just given, but forget the second and third steps while carrying out the first one. When they are reading a paragraph, they may forget what was at the beginning of the paragraph by the time they get to its end. These students seem to have difficulty with reading comprehension. In fact, they do; but the comprehension problem is due to a failure in the memory system rather than the language system.

Students who have deficits in the storage and retrieval of information from long-term memory may study for tests, but not be able to recall the information they studied when taking the tests. They frequently have difficulty recalling specific factual information such as dates or rules of grammar. They have a poor memory of the material they learnt earlier, a year or two before. They may also be unable to answer specific questions put to them in class even when the teacher thinks they really know the information.

It is useful to learn how to memorize vocabulary words for a foreign language faster and more easily. Thus we can change our study habits and improve the effectiveness of our time. Improving memory requires awareness of the possibility of forgetting and then making a conscious effort to use some type of memory tool. Let us turn to some of the strategies which can enhance students' memory:

- **Concentrating students' attention:** most memory problems in learning are due to lack of attention, so the information never gets processed in a meaningful way (encoded). Making a conscious decision to pay attention is the first important step toward improving memory skills. So, students should try to study in a place free of distractions such as television and music.

- **Establishing regular study sessions:** studying on a regular basis ensures better memorization of the material learnt. Studying materials over a number of sessions gives them the time they need to adequately process the information. Changing the study routine can also increase the effectiveness of the studies.
- **Structuring and organizing the material under study:** information is organized in memory in related clusters. Grouping similar concepts and terms together, or making an outline of the notes and textbook readings will be helpful for grouping related concepts.
- **Associating the new information to familiar things:** students can learn or recall something more easily if they associate it with something they already know, and it is the teacher's task to find out how this information relates to things that are already known to the students. By establishing relationships between new ideas and previously existing memories, the likelihood of recalling the recently learned information can be increased. A specific date can be associated with another well-known date. Likewise, a new name can be associated with a famous person or someone they are familiar with.
- **Visualizing the material being studied:** this means forming a picture in one's mind's eye of the things to be remembered. Many people benefit greatly from visualizing the information they study paying attention to the photographs, and other graphics in their textbooks. Creating own visual cues (using pens of different colors) can help to group related ideas in written study materials.
- **Teaching students to over-learn the new information:** several error-free repetitions of the newly learnt material are needed. If a larger amount of material is to be learned, it should be broken up into smaller parts.
- **Encouraging active reading:** to enhance short-term memory registration or working memory when reading, students should highlight the key words. They can then go back and read those words. To consolidate this information in long-term memory, they can use graphic organizers. Research has shown that the use of graphic organizers increases academic achievement for all students.
- **Engaging students in retrieval practice** (i.e. the act of recalling information that has been studied from long-term memory): if students are required to make up their own tests and take them, it will give their teachers information about whether they know the most important information instead of focusing on details that are less important.
- **Priming the memory prior to learning:** cues that prepare students for the task to be presented are helpful. For instance, when a reading comprehension task is given, students will get an idea of what is expected by discussing the vocabulary and the overall topic beforehand. This will allow them to focus on the information and engage in more effective depth of processing.
- **Reviewing the material before going to sleep:** the information studied this way is better remembered.

Despite the important place memory occupies in learning, most students tend to take it for granted until the point when it fails and they forget something. So, they should remember that the more they give to their memory the more it will give back.

In conclusion, the strategies and techniques listed above will undoubtedly go a long way in helping learners improve their memory in terms of encoding, storing and retrieving information. As Margaret Fairless Barber points out “To look backward for a while is to refresh the eye, to restore it, and to render it for its prime function of looking forward” (M. Barber).

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#### **Հիշողության կարևորությունը ուսուցման գործընթացում (հիշողությունը խթանող միջոցներ)**

Հիշողության, որպես մտավոր գործունեության հիմնական տարրերից մեկի կարևորությունը ուսուցման գործընթացում վաղուց ի վեր ճանաչվել է հոգեբանների, մեթոդաբանների և ուսուցիչների կողմից: Շատ հաճախ ուսանողների՝ նյութի ընկալման և մտապահման հետ կապված անհաջողություններն ու թերացումները պայմանավորված են հիշողության խնդիրներով: Սույն հոդվածում հեղինակներն առաջարկում են հիշողությունը խթանող մի շարք միջոցներ և համոզմունք հայտնում, որ դրանց կիրառումը ուսուցման գործընթացում կարող է մեծապես նպաստել ուսանողների գիտելիքների արդյունավետ ընկալմանը, մտապահմանն ու վերարտադրմանը: