Learning How To Learn

Diane Feibel
University of Cincinnati—Raymond Walters

An awareness of how one learns—using strategies, different learning styles, and memory storage steps—enhances students' ability and interest to modify and improve their skills and performance. As college teachers teaching large amounts of content material, we must be very aware of the college student's skills in taking our information, processing, comprehending, organizing, and storing it. By explaining to our students how they learn and the limitations of their own skills, we can prepare them to learn how to learn.

As students begin to understand how they learn and how they can best memorize information, which is called metacognition and metamemory, they can become more efficient and competent. Rather than studying aimlessly and inefficiently for many hours, they can learn how to organize the subject matter better, how to learn it based upon their learning style, and become active, rather than passive, participants in the educational process.

When students believe that they have more control over their learning process and subject matter, they do not feel so overwhelmed and confused. The end result is that these students get better grades, participate more in class, and tend to stay in school.

The Right And Left Aspects Of Learning

The main aspects of learning that I believe are vital for students to understand are: (1) style of processing: auditory vs. visual vs. tactile, (2) memory storage models, (3) language processing, and (4) strategies. By spending time at the beginning of each course in explaining these four areas, one can refer to them throughout the semester when teaching various concepts. The following descriptions will cover briefly the approach that can be used in any course.

(1) In trying to understand what processing style involves, one needs to understand that it is based upon how the human brain is organized.

There are two major hemispheres which generally control different approaches to processing. Simplistically, the left hemisphere controls language and language-mediation; the right hemisphere controls visual–spatial and Gestalt processing. In most individuals, the two hemispheres are comparable in ability and, therefore, work together efficiently to solve problems. However, sometimes, one side is stronger or more capable than the other and wants to approach learning and problem–solving in its own particular way.

Individuals who are strongly left–brained are methodical, logical, and focus on detail but may miss the total picture due to getting overwhelmed with trivial parts. On the other hand, right–brained individuals get total concepts quickly but often have trouble understanding or analyzing the separate parts that make up the whole. They process in parallel, meaning they can deal with several ideas at one time.

These cognitive styles are innate and relatively permanent. We are born with them, and they remain essentially the same, although they can be modified with education and training. The style of processing is the way that each individual learns most efficiently. Almost everyone has a preferred style of processing. Those who learn by listening to information, follow directions by writing down steps, learn definitions and vocabulary by linguistic descriptions, or use a step–wise hierarchical approach to learning are auditory/verbal learners. Those who learn by looking at pictures, graphs, diagrams, charts but "tune out" when listening to language, use logos or maps to understand and remember information and can work on several ideas at one time are visual/Gestalt learners. Since different learning styles require different learning strategies, if students can discover their strongest learning style, they can alter their method of study and memorization. By discussing this idea in class, students share their own experiences, and it makes everyone feel that individual differences are acceptable.

(2) Memory storage systems cover the three types of memory—sensory, short–term, and long–term memory—as well as the two levels of memory—semantic and syntactic. Sensory memory is very short–lived, lasting only a few seconds and appearing as either icons (visual) or echoes (auditory). Before sensory memory disappears, if we decide to focus on the information and retain it, it enters short–term memory

which lasts approximately 18 seconds and is our working memory. Whatever information is then actively retained enters long–term memory which may be stored forever. The important point to get across to students here is that active analysis of the information must occur in order for it to be stored. Picturing the mind as a tree with branches is helpful in showing students that unless they make the information their own by paraphrasing, organizing, and forming relationships with previously–learned material, they will just be shoving the ideas in and may never be able to recall them efficiently. If they actively work on the material, they form strong links along the mind's "tree branches" and between the branches so that when recall is needed all the related information efficiently comes back out into working memory for our use. Weak associations lead to piecemeal and incomplete recall. Memory techniques include: chunking, rehearsal, forming associations with new material and previously–learned information, learning mnemonics, and using short but frequent study periods.

Information is stored in semantic terms (i.e., general concepts or total ideas) and syntactic terms (i.e., linguistically and grammatically). One must understand and store both. By memorizing definitions, one is not learning, just using rote storage which can easily be lost.

(3) Language processing involves comprehending what is said. In our classes, we must assume there will be a range of comprehension levels, and, in order to augment the weakest members of the group, we must use a variety of techniques: using small units, paraphrasing, using different vocabulary in definitions, and giving similes, metaphors, and examples. As with memory storage, students must understand the total concept, i.e. semantics as well as be able to process the grammar, phrasing, and vocabulary, i.e., syntax.

(4) Strategies which work on different learning styles, memory storage and retrieval, and language processing include those listed below. The purpose of these strategies is to show students how to focus upon, analyze, organize, and store information in ways to improve retention and recall:

> (A) Summarize the whole concept—its importance, how it relates to an experience the student can appreciate and understand, and how it relates to examples in life or the

particular course being taught.

(B) Break down the concept into small parts—define the smaller units by using visual clues, paraphrasing, synonyms. Give examples and analogies for associations between the parts. Show similarities, differences, and distinctive features to help the students learn to focus better.

(C) Build up the small parts into the total concept—show how the parts become the whole by forming large associations and relationships by using charts and graphs. Give examples and have students give examples (top–down processing).

(D) Move students from inductive (bottom–up processing) to deductive processing.

Summary

One can vastly improve the students' acquisition of the material presented as well as performance in class by teaching them how to learn more efficiently by learning about their individual style of processing, steps in memory storage, language processing, and strategies. I stress viewing learning and test–taking as an event, and one must actively be involved working on the material, just as one would for an athletic event. Students cannot be simply passive recipients of the information we throw out but will have a better chance if they understand how their minds work and how they can improve their skills.

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Biography

Diane Feibel is an assistant professor of psychology at the University of Cincinnati—Raymond Walters. Before 1998, she had been in private practice as a Licensed Psychologist. Feibel holds a B.S. and M.A. in biology from Columbia University, an M.A. from the University of Virginia, and an ED.D. in psychology from the University of Rochester. She may be reached by e–mail at feibeldk@ucrwcu.rwc.uc.edu.