



Memory Strategies for Students: The Value of Strategies

By: Regina G. Richards (2008)

The purpose of this article is to provide a sampling of strategies to help students enhance their learning experiences.

Strategies can be used in many different ways. They can be used to introduce a concept in a way that will stick and provide a palette for the student to use as he works to expand his understanding of the concept. Strategies can also be used to reinforce a concept in a way that provides a tool to help the student retrieve the known information.

As Mel Levine explained in May 2000, International Dyslexia Association workshop entitled "Enabling Without Labeling," using strategies intrinsically means slowing down when you do something. It is a process of deceleration so you can exercise quality control.

Strategies can be used by teachers, parents, or by students themselves. Teachers using strategies will be able to vary their presentations so that they use a variety of teaching styles. Since each student learns best in his or her own preferred way, when information is presented using varied formats, the teacher increases the probability of "reaching" a larger proportion of the students in the classroom. Parents can incorporate strategies when helping with nightly homework assignments. This has an added benefit of modeling good learning and studying techniques that the student can then use independently at a later time.

An overall goal for students is to develop automatic strategy use, as this increases efficiency when learning and studying. Initially some strategies may take more time for students and they may be hesitant to spend the extra time. But eventually they will find that the use of strategies enhances their ability to organize and retrieve the information, consequently increasing learning efficiency.

Many of the strategies use a technique called mnemonics, which are basically "memory tools." Mnemonics can help capture information for later retrieval because they help the student form a pattern.

We've all seen children who can easily repeat silly mnemonic sentences such as commercials. Why is that? There are several answers to that question. The silliness triggers a focus because there is something "different," and the pattern helps hook the information together. Use of multisensory techniques such as colors, visual pictures, songs, rhythms, or movement often capitalize on students' strengths. Children who learn differently, especially dyslexic children and those that struggle with language development, tend to learn best with active learning and creative involvement with the task or concept.

Preplanning is important

Prep leads to generalization of the concepts as well as greater efficiency in organizing information. Dr. Levine and Dr. Meltzer, in their audio-tape series *Reaching Minds* discuss the importance of strategy use and the issue of generalization. They present a suggestion of "strategy grades" instead of "effort grades." Dr. Levine states,

I thought that before a test, kids ought to be asked to hand in a memory plan, the day before. The way a pilot would hand in the flight plan. In other words, how are you going to go about getting stuff into and out of your memory? And they ought to be graded on their plan as much as they are on the test. It might be very nice, as

a matter of fact, to eliminate something called "effort grades," which are very morally tinged and inappropriate, in my opinion, and substitute strategy grades, and grade a kid not so much of how he did on the test, but how he went about preparing for it. That may be much more meaningful as a part of the assessment.

Strategies that help introduce or organize a concept

Visual organizers, such as the following examples from my book *LEARN: Playful Strategies for All Learners*, are very useful for introducing new concepts. They help the student develop a pattern that connects new information with other, more familiar, information.

For example, in English, many vocabulary words have more than one meaning. The meaning varies dependant upon the content or the situation in which the word is used. Some of these words are spelled the same (homonyms) while other words may be spelled differently (homophones).

The homonym *season* can mean "flavor" or "period of the year." Students can be encouraged to draw a picture to illustrate each meaning separately and then write (or dictate) a single sentence that uses both meanings. An example sentence could be, "let's season the season with parties."

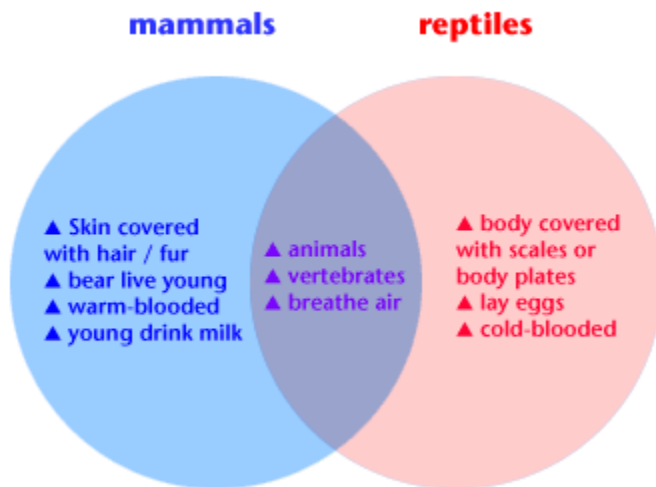
The homophone *needle* can mean "tease or bother" or "a sewing tool." An example related sentence might be "don't needle me about threading the needle." Students may wish to use more creativity and draw a picture that represents both meanings of the sentence as in the following picture for the words *hair* or *hare*.

Is Mr. Magic losing his hair or hare or both?



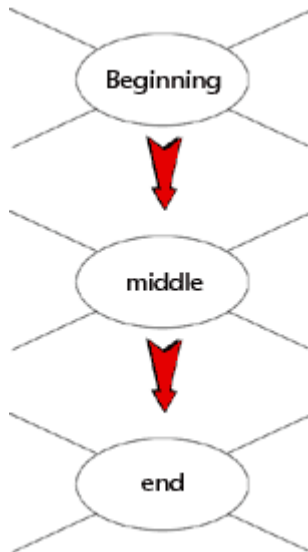
Other strategies that use student's strengths in visual patterns involve the wide variety of visual organizers that are available. Visual organizers can be used to compare and contrast two related aspects as in the Venn diagram which compares mammals and reptiles. In this Venn diagram, the information in the center represents what is similar about mammals and reptiles.

A Venn diagram comparing mammals and reptiles



Basic visual organizers, also called mind maps or clusters, can be used to summarize information from a lecture or reading materials, or to prepare for a writing assignment. The main idea is placed in the center and then the supporting facts can be attached in various formats. Mind maps can also be organized to show cause and effect or a sequence of events, such as the following episodic organizer.

Episodic organizer



Strategies that help students review and retrieve known information

These types of strategies are very valuable for students. That is because many times students learn information but then don't have a plan to easily retrieve or recall that information when it is needed (during a test, for example). It is important that the students know the information well, because otherwise the mnemonic, whether it is a silly sentence or a picture, will not serve its function. For example, how useful is it if

the student knows that the letters in the word HOMES represent the first letter of each of the five Great Lakes, but does not know the names of the lakes. Will it help him to know that one of the Great Lakes starts with the letter H if he cannot recall the word *Huron*?

Humor is valuable with these strategies because our brains are good at remembering unusual or silly things. Imagery or picture associations can be encouraged through modeling or using actual pictures. A short sentence or a sequence of letters is often used to aid in the recall. These are technically called *acrostics* (a short sentence with the initial letter of each word matching the first letter of the names or words to recall in the correct sequence) or *acronyms* (a sequence of letters that may or may not form a word, with each letter representing one of the keywords to be remembered). HOMES is an example acronym for the five great lakes: Huron, Ontario, Michigan, Erie, Superior. Some examples of acrostics follow:

The Mnemonic	The first letter of each word helps recall:
My Very Easy Method Just Speeds Up Naming Planets	<i>The planets in order: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto</i>
My Very Eager Mother Just Served Us Nine Pizzas	<i>The planets in order: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto</i>
A Rat In The House Might Eat The Ice Cream	The spelling of the word arithmetic
Dear Miss Sally Brown	The main steps in long division: <i>divide, multiply, subtract, bring down</i>
Does McDonalds Sell CheeseBurgers	The main steps in long division: <i>divide, multiply, subtract, bring down</i>
Roy G. Biv	The main steps in long division: <i>divide, multiply, subtract, compare, bring down</i>
Never Eat Shredded Wheat	The sequence of directions, going clockwise: <i>north, east, south, west</i>

Strategies that help students recall and retrieve information

These types of strategies are very useful for students who have difficulty learning associative information, such as sound/symbol correspondences or math facts. Some students have an easy time remembering such information, such as the fact that the letter **a** has the /a/ sound or that 9x3 is 27. Other students may struggle greatly to remember these "simple" associations. Using strategies with these tasks can be especially valuable for students who learn differently because some of their processing issues may interfere with associative recall. Also, appropriate strategies can help them take advantage of their substantial processing strengths, which in turn helps increase their self-esteem as well as their learning.

Sound/symbol correspondences

Sound/symbol correspondences can be recalled using visual mnemonics. This type of strategy presents a picture cue that can be used to help trigger the association to be remembered. For example, the word *apple*, along with a picture, can be used as a keyword to recall that the letter **a** has the /a/ sound. When words are combined into a silly phrase, the connections and patterns become even stronger. For example, keywords for the five main short vowels can be combined into the phrase, "apple Ed is on umbrella" as in this picture from my book *Memory Foundations for Reading*.



apple Ed is on umbrella

Math

Memorizing math facts, especially multiplication facts, can be a challenge for many students. Some students memorize the facts but then struggle to retrieve them when they are doing actual calculations. Students who struggle should be taught to look for patterns within the numbers.

An example pattern is evidenced when multiplying nines: adding up the digits in the answer will always result in the number 9. For example, in $9 \times 1 = 9$, $9 \times 4 = 36$, or $9 \times 7 = 63$. The answers (9, 36, or 63) each add up to 9.

Students can use their fingers to calculate many of the multiplication facts. The easiest strategy is for multiplying a number by 9. To use the strategy, students place both hands in front with the palm side down and fingers outstretched. Each finger is numbered (either mentally or with an actual sticker) beginning with the pinkie on the left hand.

Numbering of fingers for 9s



The number that is being multiplied is folded over, as in the diagram. The student then counts the number of fingers to the left of the folded down finger (in this example of 9×5 , there are four fingers to the left). This number represents the tens digit (4). The student then counts the number of fingers to the right of the folded down finger (in this example, there are five fingers to the left). This number represents the ones digit (5). The answer to this problem (9×5) is 45.

Process for figuring 9x5



The value of strategies

Learning strategies help all of us learn *how to learn* by focusing on the process and the plan rather than just the outcome or the content of learning. The goal is for students to carry many of the strategies and habits learned during the school years throughout life to enhance lifelong learning. While it is true that as adults we are generally not asked to calculate a page of math facts, it is also true that we will be asked to learn new information, analyze tasks, organize data, and plan our activities. These are the lifelong skills that are critical for all of us to acquire in school.

Too much too fast... it won't last!

Several years ago, a *Farside* cartoon was published showing a classroom situation. The student was raising his hand and asking if he could be excused because his "brain was full." This highlights an important caution to remember in using mnemonics. Go slowly. Too many strategies at once may confuse the student rather than help.

- Use strategies to have fun with your students
- Use them as examples to create more strategies that will help enhance students learning
- Vary the strategies and include different sensory patterns
- Help students realize the importance of strategies as a lifelong skill

Doing so will help enhance students' self-esteem because they will be more successful. When students learn to proceed through a task systematically, it will seem less overwhelming.

As my son and I found when writing the book *Eli, The Boy Who Hated To Write: Understanding Dysgraphia*, when we feel calm instead of frustrated, it is actually easier to get through the work.

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Richards, R. (2008). *Memory Strategies for Students: The Value of Strategies*. Exclusive to LD OnLine.

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