



AP Chalkboard

An AP Support Newsletter
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Learning with Our Senses

The physiology of learning reads like a fantastic story, one seemingly stranger than fiction, and like every good story there are some universal truths, morals to pay attention to. The moral of this one is: **Dittos don't make dendrites!** That is to say that neither dittos or the textbook and its accompanying workbook nor the typical lecture create the enriched environment necessary in order to activate the brain to grow dendrites. In other words, every minute spent on what children experience as boring "seat work" is a minute spent NOT building intelligence.

So, the key question here for the classroom teacher is how to elicit maximum activation of students' brains? Not surprisingly, there is a direct correlation between the number of senses activated and the amount and locations of brain activity. In the typical setting of lecture and textbooks, only two of the 19 senses are involved. If we want education to be powerful, we need to provide input that involves **all 19 senses**. (from Robert Samples' *Open Mind, Whole Mind* (1987) p. 13.) Yes, 19, not five! The cerebral cortex processes thousands of bits of sensory data per minute.

SENSES	KIND OF INPUT
Sight	Visible light
Hearing	Vibrations in the air
Touch	Tactile contact
Taste	Chemical molecular
Smell	Olfactory molecular
Balance	Kinesthetic geotropic
Vestibular	Repetitious movement
Temperature	Molecular motion
Pain	Nociception
Eidetic Imagery	Neuroelectrical image retention
Magnetic	Ferromagnetic orientation
Infrared	Long electromagnetic waves
Ultraviolet	Short electromagnetic waves
Ionic	Airborne ionic charge
Vomeronasal	Pheromonic sensing
Proximal	Physical closeness
Electrical	Surface charge
Barometric	Atmospheric pressure
Geogravimetric	Sensing mass differences

Consider for a moment learning experiences you have had that engaged your 19 senses. Chances are those that stand out in your memory occurred in a highly enriched environment, e.g., camping, hiking, visiting a foreign country, experiencing a snowstorm or earthquake. Or perhaps it was one of those special moments from childhood.... Many senses were engaged, promoting the creation of a strong memory of the event. Such moments of acute sensory awareness stay with us always. Imagine if every school day produced memories of such power! Can the school have such impact on learners? We believe the answer is a resounding "Yes."

Excerpted from Olsen, K. D. (1995). *Synergy: Transforming America's High Schools Through Integrated Thematic Instruction*. pp. 2-9 to 2-11. Retrieved 07/02/2008 from <http://www.hope.edu/academic/education/wessman/unit5/19senses.htm>



How to Memorize Other than Rote

The ex-basketball star Jerry Lucas was also a Phi Beta Kappa at Ohio State. He attributes his scholastic prowess to a memory system he developed. Lucas and Harry Lorayne (a memory expert) wrote *The Memory Book* (Scarborough House, Brair Manor, N.Y., 1974). The following is a partial summary of their book.

1. Attempt to associate the material that you are trying to memorize with something that has a special meaning to you, or something you personally think is funny.

Example:

How to memorize the lines on the music staff, the treble clef (E,G,B,D,F).

Make a word out of each letter, using the staff letter as the first letter of the word.

“Every Good Boy Does Fine.”

2. Assume you wanted to learn ten items in sequence: airplane, tree, envelope, earring, sing, baseball, salami, star, nose . . . All you need to do is form a ridiculous picture in your mind's eye -- an association between two things . . . A giant tree is flying instead of an airplane, or an airplane is growing instead of a tree" Continue with this process until you get through the entire List.
3. Try to associate things you know to things you don't know. People have remembered that Mount Fujiyama is 12,365 feet high by associating it to a calendar (12 months, 365 days in a year).
4. Try to “link” bits of sequential information together. If one bit of information leads you to the next in your memorization, then you are “linking” properly. Attempt to see the things you are trying to memorize as being out of proportion (too big), in exaggerated numbers (too many), or with too much action (a dancing rock).



Imagery and Visualization: Picture the Future

Using imagery and visualization doesn't have an age limit; children as well as adults can use this technique as a part of setting and reaching goals. Using visual images of goals combined with the other senses, words, thoughts, and feelings tap both the left and right sides of the brain.

Teach students to spend a few minutes a day visualizing themselves reaching their goals. Encourage them to think about the sounds, smells, and tastes associated with the pictures they form in their head. Have them put themselves into the picture. What are they doing? How are they feeling? The goal is to try to

create a vision that stirs motivation, passion, and enthusiasm. Have your students talk to you about their goals and what they “see” when they use imagery and visualization.

Joel Frankel and Teddi McDonald suggest the following creative tools that are concrete ways of using visualization and imagery. Try them out for yourself and then teach them to your students. You may be surprised by how powerful these tools can be!

Create a goals list poster. Using a piece of poster paper, write out your goals list in colors. You can use “Mind-Mapping” and put the goals anywhere on the page rather than in linear order. Don’t forget to add sub-goals with lines linking them to the major goals. Decorate the poster with colorful pictures or stickers. Draw things on the poster or paste on pictures you cut out of magazines, whatever appeals to you. It should be exciting and make you feel great when you look at it.

Create a collage to support your vision. To make a goals collage, cut out pictures and words that you like from magazines and glue them onto a piece of paper the size of a placemat or larger. Be sure to put your photograph on the page as well. Display it in a location where you notice it at least once a day.

Use images that inspire. Find an inspiring picture and write a few motivating words on it. Try writing the words with brightly colored markers or finger paints. Hang this picture on your wall at home or at work to inspire you and build energy for your goals. You can use pictures of anything including animals, nature, and mythical figures.

Try writing goals with non-dominant hand. One interesting technique that can help break through linear thinking and tap creative thinking is to write goals and detailed plans with the opposite hand from the one you normally use. This technique can reveal hidden aspects of plans and dreams and new goals, too. According to a recent article in the magazine *Utne Reader*, this process is an excellent technique for tapping into creativity and intuition.

Use the computer to support you in reaching goals. There are many ways you can put goals on the computer. Scan your collage or a poster/picture that inspires you into your computer, convert it to a graphic and use it as wallpaper. You can create a screensaver with your scanned images or just put up a digital “post it” with your goals list. You can also create your own custom posters, personal stickers, and printouts using a graphics program.

Remember, the only way to reach a goal is to have a goal! As George Bernard Shaw once said, “Imagination is the beginning of creation. You imagine what you desire, you will what you imagine and at last you create what you will.”

Adapted from Frankel, J. & McDonald, T (2005). Goal setting. Retrieved 7/24/2007 online at: <http://www.success77.com>



“Getting things done is not always what is most important. There is value in allowing others to learn, even if the task is not accomplished as quickly, efficiently or effectively.”
-- R.D. Clyde