Tuesday’s Tidbits

Learning Styles and Strategies

The term learning style has been used to describe the different ways that students learn, and a search of the literature shows there are many models and different terminology used to explain them. One model, the Felder-Soloman Index of Learning Styles, was developed by Richard Felder and Barbara Soloman for use by college professors and students in the sciences and engineering. Their model explains the different ways students receive and process information.

The term teaching method describes the way that instructors teach, and it varies just as learning styles do. According to Felder & Soloman (n.d.), “some instructors lecture, others demonstrate or lead students to self-discovery; some focus on principles and others on applications; some emphasize memory and others understanding.” Professors should strive for a balance of these instructional methods to address the different learning styles of the students in their classes.

If you are having a hard time understanding the material your instructor is covering, you may want to find out what your learning style is according to the Felder-Soloman Index. Go to http://www.engr.ncsu.edu/learningstyles/ilsweb.html to do so, then try some of the tips provided here to get the most out of your education.

The Felder and Soloman Index of Learning Styles has been reproduced here. It explains the different types of learners and how they learn best, and it includes suggested strategies for each type of learner to help maximize learning. It’s important that each student determines how they learn best as this is critical to their success.

### ACTIVE LEARNERS

- Active learners tend to retain and understand information best by doing something active with it—discussing or applying it or explaining it to others.
- “Let’s try it out and see how it works” is an active learner’s phrase.
- Active learners tend to like group work more than reflective learners.

Sitting through lectures without getting to do anything physical but take notes is hard for both learning types, but particularly hard for active learners.

**How can active learners help themselves?**

If you are an active learner in a class that allows little or no class time for discussion or problem-solving activities, you should try to compensate for these lacks when you study. Study in a group in which the members take turns explaining different topics to each other. Work with others to guess what you will be asked on the next test and figure out how you will answer. You will always retain information better if you find ways to do something with it.

### REFLECTIVE LEARNERS

- Reflective learners tend to retain and understand information best by if they can think about it quietly first.
- "Let's think it through first” is the reflective learner’s response.
- Reflective learners prefer working alone.

**How can reflective learners help themselves?**

If you are a reflective learner in a class that allows little or no class time for thinking about new information, you should try to compensate for this lack when you study. Don’t simply read or memorize the material; stop periodically to review what you have read and to think of possible questions or applications. You might find it helpful to write short summaries of readings or class notes in your own words. Doing so may take extra time but will enable you to retain the material more effectively.
How can sensing learners help themselves?

Sensors remember and understand information best if they can see how it connects to the real world. If you are in a class where most of the material is abstract and theoretical, you may have difficulty. Ask your instructor for specific examples of concepts and procedures, and find out how the concepts apply in practice. If the teacher does not provide enough specifics, try to find some in your course text or other references or by brainstorming with friends or classmates.

How can intuitive learners help themselves?

Many college lecture classes are aimed at intuitors. However, if you are an intuitor and you happen to be in a class that deals primarily with memorization and rote substitution in formulas, you may have trouble with boredom. Ask your instructor for interpretations or theories that link the facts, or try to find the connections yourself. You may also be prone to careless mistakes on test because you are impatient with details and don't like repetition (as in checking your completed solutions). Take time to read the entire question before you start answering and be sure to check your results.

VISUAL LEARNERS

• Visual learners remember best what they see—pictures, diagrams, flow charts, time lines, films, and demonstrations.

Just about everyone learns more when information is presented both visually and verbally. But in most college classes, very little visual information is presented; students mainly listen to lectures and read material written on whiteboards and in textbooks and handouts. Unfortunately, most people are visual learners, which means that most students do not get nearly as much as they would if more visual presentation were used in class. Good learners are capable of processing information presented either visually or verbally.

How can visual learners help themselves?

If you are a visual learner, try to find diagrams, sketches, schematics, photographs, flow charts, or any other visual representation of course material that is predominantly verbal. Ask your instructor, consult reference books, and see if any videotapes or CD-ROM displays of the course material are available. Prepare a concept map by listing key points, enclosing them in boxes or circles, and drawing lines with arrows between concepts to show connections. Color-code your notes with a highlighter so that everything relating to one topic is the same color.

VERBAL LEARNERS

• Verbal learners get more out of words—written and spoken explanations.

How can verbal learners help themselves?

Write summaries or outlines of course material in your own words. Working in groups can be particularly effective: you gain understanding of material by hearing classmates' explanations and you learn even more when you do the explaining.
SEQUENTIAL LEARNERS

- Sequential learners tend to gain understanding in linear steps, with each step following logically from the previous one.
- Sequential learners tend to follow logical stepwise paths in finding solutions.

How can sequential learners help themselves?

Most college courses are taught in a sequential manner. However, if you are a sequential learner and you have an instructor who jumps around from topic to topic or skips steps, you may have difficulty following and remembering. Ask the instructor to fill in the skipped steps, or fill them in yourself by consulting references. When you are studying, take the time to outline the lecture material for yourself in logical order. In the long run doing so will save you time. You might also try to strengthen your global thinking skills by relating each new topic you study to things you already know. The more you can do so, the deeper your understanding of the topic is likely to be.

GLOBAL LEARNERS

- Global learners tend to learn in large jumps, absorbing material almost randomly without seeing connections, and then suddenly "getting it."
- Global learners may be able to solve complex problems quickly or put things together in novel ways once they have grasped the big picture, but they may have difficulty explaining how they did it.

How can global learners help themselves?

If you are a global learner, it can be helpful for you to realize that you need the big picture of a subject before you can master details. If your instructor plunges directly into new topics without bothering to explain how they relate to what you already know, it can cause problems for you. Fortunately, there are steps you can take that may help you get the big picture more rapidly. Before you begin to study the first section of a chapter in a text, skim through the entire chapter to get an overview. Doing so may be time-consuming initially but it may save you from going over and over individual parts later. Instead of spending a short time on every subject every night, you might find it more productive to immerse yourself in individual subjects for large blocks. Try to relate the subject to things you already know, either by asking the instructor to help you see connections or by consulting references. You will eventually understand the new material, and once you do your understanding of how it connects to other topics and disciplines may enable you to apply it in ways that most sequential thinkers can’t.

Balancing Your Learning Style—What You Can Do

According to “Learning styles” (n.d.), there are ways to bring your learning styles into balance. They have put together the following information based on the Felder-Soloman Index.

Active Learners – if you act before you think you are apt to make hasty and potentially ill-informed judgments. You need to concentrate on summarizing situations, and taking time to sit by yourself to digest information you have been given before jumping in and discussing it with others.

Reflective Learners – if you think too much you risk doing nothing. There comes a time when a decision has to be made or an action taken. Involve yourself in group decision-making whenever possible and try to apply the information you have in as practical a manner as possible.

Sensory Learners – if you rely too much on sensing, you can tend to prefer what is familiar, and concentrate on facts you know instead of being innovative and adapting to new situations. Seek out opportunities to learn theoretical information and then bring in facts to support or negate these theories.

Intuitive Learners – if you rely too much on intuition you risk missing important details, which can lead to poor decision-making and problem solving. Force yourself to learn facts or memorize data that will help you defend or criticize a theory or procedure you are working with. You may need to slow down and look at detail you would otherwise typically skim.

Visual Learners – if you concentrate more on pictorial or graphical information than on words, you put yourself at a distinct disadvantage because verbal and written information is still the main preferred choice for delivery of information. Practice your note taking and seek out opportunities to explain information to others using words.

Verbal Learners – when information is presented in diagrams, sketches, flow charts, and so on, it is designed to be understood quickly. If you can develop your skills in this area, you can significantly reduce time spent learning and absorbing information. Look for opportunities to learn through audio-visual presentations (such as video and Webcasts.) When making notes, group information according to concepts and then create visual links with arrows going to and from them. Take every opportunity you can to create charts and tables and diagrams.

Sequential Learners – when you break things down into small components you are often able to dive right into problem solving. This seems to be advantageous but can often be unproductive. Force yourself to slow down and understand why you are doing something and how it is connected to the overall purpose or objective. Ask yourself how your actions are going to help you in the long run. If you can’t think of a practical application for what you are doing then stop and do some more "big picture" thinking.

Global Learners – if grasping the big picture is easy for you, then you can be at risk of wanting to run before you can walk. You see what is needed but may not take the time to learn how best to accomplish it. Take the time to ask for explanations, and force yourself to complete all problem-solving steps before coming to a conclusion or making a decision. If you can’t explain what you have done and why, then you may have missed critical details.

References
