The VARK Helpsheets

http://www.vark-learn.com/english/page.asp?p=helpsheets

Study Practices Keyed to VARK Preferences

Your VARK preferences can be used to help you develop additional, effective strategies for learning. From the choices below, select your particular preference(s) to see how you should:

1. take in information;
2. study information for effective learning;
3. study for performing well on an examination.

Visual Study Strategies (V)
Aural Study Strategies (A)
Read/write Study Strategies (R)
Kinesthetic Study Strategies (K)
Multimodal Study Strategies (MM)

Multimodal Study Strategies

If you have multiple preferences you are in the majority as approximately 60% of any population fits that category.

Multiple preferences are interesting varied. For example you may have two strong preferences V and A or R and K, or you may have three strong preferences such as VAR or ARK. Some people have no particular strong preferences and their scores are almost even for all four modes. For example one person had scores of V=6, A=6, R=6, and K=6. She said that she adapted to the mode being used or requested. If the teacher or supervisor preferred a written mode she switched into that mode for her responses and for her learning.

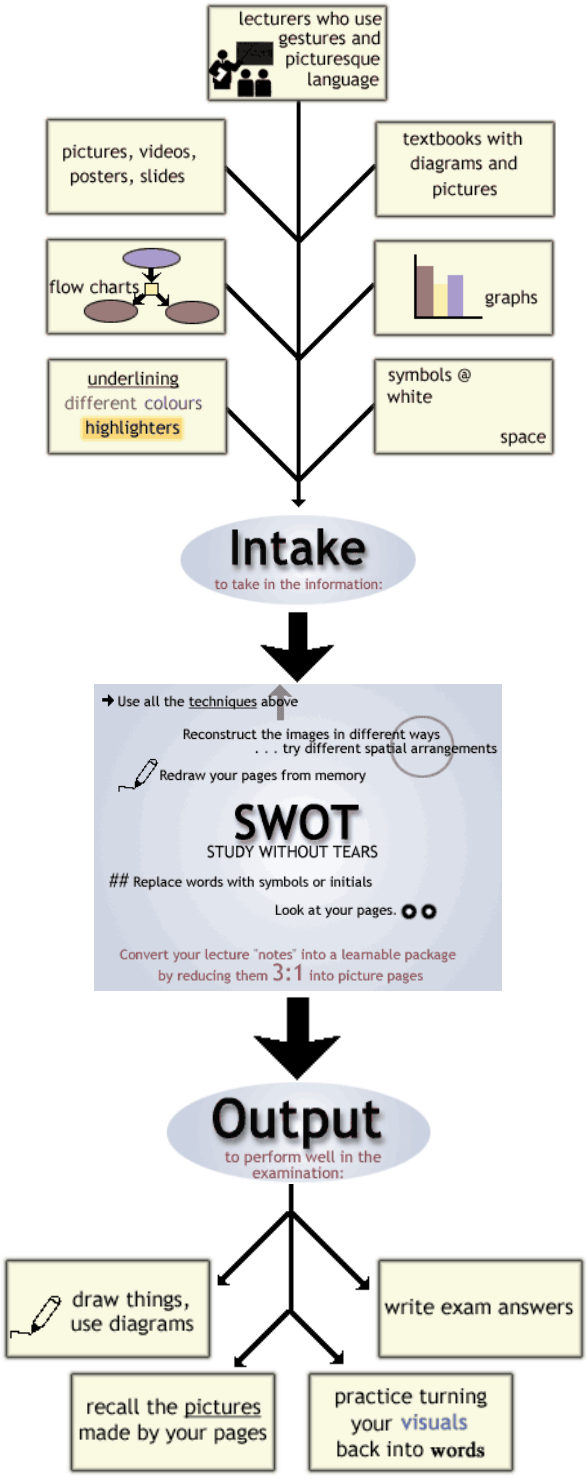
So multiple preferences give you choices of two or three or four modes to use for your interaction with others. Positive reactions mean that those with multimodal preferences choose to match or align their mode to the significant others around them. But, some people have admitted that if they want to be annoying they may stay in a mode different from the person with whom they are working. For example they may ask for written evidence in an argument, knowing that the other person much prefers to refer only to oral information.

If you have two almost equal preferences please read the study strategies that apply to your two choices. If you have three preferences read the three lists that apply and similarly for those with four. You will need to read two or three or four lists of strategies. One interesting piece of information that people with multimodal preferences have told us is that it is necessary for them to use more than one strategy for learning and communicating. They feel insecure with only one. Alternatively those with a single preference often "get it" by using the set of strategies that align with their single preference.

We are noticing some differences among those who are multimodal especially those who have chosen fewer than 25 options and those who have chosen more than 30. If you have chosen fewer than 25 of the options in the questionnaire you may prefer to see your highest score as your main preference - almost like a single preference. To read more about Multimodality you can download an article written by Neil Fleming in September 2007 Multimodality

Visual Study Strategies:

You want the whole picture so you are probably holistic rather than reductionist in your approach.. You are often swayed by the look of an object. You are interested in color and layout and design and you know where you are in your environment. You are probably going to draw something.



Aural Study Strategies

You prefer to have this page explained to you.
The written words are not as valuable as those you hear.
You will probably go and tell somebody about this.

If you have a strong preference for learning by **Aural** methods (**A** = hearing) you should use some or all of the following:

INTAKE

To take in the information:

- attend classes
- attend discussions and tutorials
- discuss topics with others
- discuss topics with your teachers
- explain new ideas to other people
- use a tape recorder
- remember the interesting examples, stories, jokes...
- describe the overheads, pictures and other visuals to somebody who was not there
- leave spaces in your notes for later recall and 'filling'

SWOT - Study without tears

To make a learnable package:

Convert your "notes" into a learnable package by reducing them (3:1)

- Your notes may be poor because you prefer to listen. You will need to expand your notes by talking with others and collecting notes from the textbook.
- Put your summarised notes onto tapes and listen to them.
- Ask others to 'hear' your understanding of a topic.
- Read your summarised notes aloud.
- Explain your notes to another 'aural' person.

OUTPUT

To perform well in any test, assignment or examination:

- Imagine talking with the examiner.
- Listen to your voices and write them down.
- Spend time in quiet places recalling the ideas.
- Practice writing answers to old exam questions.
- Speak your answers aloud or inside your head.

Read/Write Study Strategies

You like this page because the emphasis is on words and lists.
You believe the meanings are within the words, so any talk is OK but this handout is better.
You are heading for the library.

If you have a strong preference for learning by **Reading** and **Writing (R & W)** learning you should use some or all of the following:

INTAKE- To take in the information:

- lists
- headings
- dictionaries
- glossaries
- definitions
- handouts
- textbooks
- readings - library
- notes (often verbatim)
- teachers who use words well and have lots of information in sentences and notes
- essays
- manuals (computing and laboratory)

SWOT - Study without tears

To make a learnable package:

Convert your "notes" into a learnable package by reducing them (3:1)

- Write out the words again and again.
- Read your notes (silently) again and again.
- Rewrite the ideas and principles into other words.
- Organize any diagrams, graphs ... into statements, e.g. "The trend is..."
- Turn reactions, actions, diagrams, charts and flows into words.
- Imagine your lists arranged in multiplechoice questions and distinguish each from each.

OUTPUT

To perform well in any test, assignment or examination:

- Write exam answers.
- Practice with multiple choice questions.
- Write paragraphs, beginnings and endings.
- Write your lists (a,b,c,d,1,2,3,4).
- Arrange your words into hierarchies and points.

Kinesthetic Study Strategies

You want to experience the exam so that you can understand it.
The ideas on this page are only valuable if they sound practical, real, and relevant to you.
You need to do things to understand.

If you have a strong **Kinesthetic** preference for learning you should use some or all of the following:

INTAKE

To take in the information:

- all your senses - sight, touch, taste, smell, hearing ...
- laboratories
- field trips
- field tours
- examples of principles
- lecturers who give real-life examples
- applications
- hands-on approaches (computing)
- trial and error
- collections of rock types, plants, shells, grasses...
- exhibits, samples, photographs...
- recipes - solutions to problems, previous exam papers

SWOT - Study without tears

To make a learnable package:

Convert your "notes" into a learnable package by reducing them (3:1)

- Your lecture notes may be poor because the topics were not 'concrete' or 'relevant'.
- You will remember the "real" things that happened.
- Put plenty of examples into your summary. Use case studies and applications to help with principles and abstract concepts.
- Talk about your notes with another "K" person.
- Use pictures and photographs that illustrate an idea.
- Go back to the laboratory or your lab manual.
- Recall the experiments, field trip...

OUTPUT

To perform well in any test, assignment or examination:

- Write practice answers, paragraphs...
- Role play the exam situation in your own room.

North Carolina State University: LEARNING STYLES AND STRATEGIES

http://www4.ncsu.edu/unity/lockers/users/f/felder/public/ILSdir/styles.htm

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ACTIVE AND REFLECTIVE 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. Reflective learners prefer to think about it quietly first.
- "Let's try it out and see how it works" is an active learner's phrase; "Let's think it through first" is the reflective learner's response.
- Active learners tend to like group work more than reflective learners, who prefer working alone.
- Sitting through lectures without getting to do anything physical but take notes is hard for both learning types, but particularly hard for active learners.

Everybody is active sometimes and reflective sometimes. Your preference for one category or the other may be strong, moderate, or mild. A balance of the two is desirable. If you always act before reflecting you can jump into things prematurely and get into trouble, while if you spend too much time reflecting you may never get anything done.

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.

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.

SENSING AND INTUITIVE LEARNERS

- Sensing learners tend to like learning facts, intuitive learners often prefer discovering possibilities and relationships.
- Sensors often like solving problems by well-established methods and dislike complications and surprises; intuitors like innovation and dislike repetition. Sensors are more likely than intuitors to resent being tested on material that has not been explicitly covered in class.
- Sensors tend to be patient with details and good at memorizing facts and doing hands-on (laboratory) work; intuitors may be better at grasping new concepts and are often more comfortable than sensors with abstractions and mathematical formulations.
- Sensors tend to be more practical and careful than intuitors; intuitors tend to work faster and to be more innovative than sensors.
- Sensors don't like courses that have no apparent connection to the real world; intuitors don't like "plug-and-chug" courses that involve a lot of memorization and routine calculations.

Everybody is sensing sometimes and intuitive sometimes. Your preference for one or the other may be strong, moderate, or mild. To be effective as a learner and problem solver, you need to be able to function both ways. If you overemphasize intuition, you may miss important details or make careless mistakes in calculations or hands-on work; if you overemphasize sensing, you may rely too much on memorization and familiar methods and not concentrate enough on understanding and innovative thinking.

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 AND VERBAL LEARNERS

Visual learners remember best what they see--pictures, diagrams, flow charts, time lines, films, and demonstrations. Verbal learners get more out of words--written and spoken explanations. Everyone learns more when information is presented both visually and verbally.

In most college classes very little visual information is presented: students mainly listen to lectures and read material written on chalkboards 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.

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 AND GLOBAL LEARNERS

- Sequential learners tend to gain understanding in linear steps, with each step following logically from the previous one. Global learners tend to learn in large jumps, absorbing material almost randomly without seeing connections, and then suddenly "getting it."
- Sequential learners tend to follow logical stepwise paths in finding solutions; 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.

Many people who read this description may conclude incorrectly that they are global, since everyone has experienced bewilderment followed by a sudden flash of understanding. What makes you global or not is what happens before the light bulb goes on. Sequential learners may not fully understand the material but they can nevertheless do something with it (like solve the homework problems or pass the test) since the pieces they have absorbed are logically connected. Strongly global learners who lack good

sequential thinking abilities, on the other hand, may have serious difficulties until they have the big picture. Even after they have it, they may be fuzzy about the details of the subject, while sequential learners may know a lot about specific aspects of a subject but may have trouble relating them to different aspects of the same subject or to different subjects.

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.

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. Above all, don't lose faith in yourself; 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 would never dream of.

INDEX OF LEARNING STYLES (ILS)

http://www4.ncsu.edu/unity/lockers/users/f/felder/public/ILSpage.html

The *Index of Learning Styles* is an on-line instrument used to assess preferences on four dimensions (active/reflective, sensing/intuitive, visual/verbal, and sequential/global) of a learning style model formulated by Richard M. Felder and Linda K. Silverman. The instrument was developed by Richard M. Felder and Barbara A. Soloman of North Carolina State University.

The ILS may be used at no cost for non-commercial purposes by individuals who wish to determine their own learning style profile and by educators who wish to use it for teaching, advising, or research. Consultants and companies who wish to use the ILS in their work may license it from North Carolina State University. (Click below on "Frequently Asked Questions" for details.)

ILS users should be aware of two important points:

1. The ILS results provide an indication of an individual's learning preferences and an even better indication of the preference profile of a group of students (e.g. a class), but they should not be over-interpreted. If someone does not agree with the ILS assessment of his or her preferences, trust that individual's judgment over the instrument results.

2. A student's learning style profile provides an indication of possible strengths and possible tendencies or habits that might lead to difficulty in academic settings. The profile does **not** reflect a student's suitability or unsuitability for a particular subject, discipline, or profession. Labeling students in this way is at best misleading, and can be destructive if the student uses the label as justification for a major shift in curriculum or career goals. (A learning style preference also does not serve as an excuse for a bad grade on the student's last physics test.)

The following items are available for viewing and downloading.

Frequently asked questions. Responses to frequently asked questions about the ILS, including questions about its origin, reliability and validity, availability for use in teaching and research, and how businesses may license it.

ILS questionnaire. A 44-item questionnaire that can be submitted and automatically scored on the Web.

Descriptions of the learning styles. A four-page handout that briefly explains the instrument results.

Descriptions and validation studies of the ILS.

(1) "Applications, Reliability, and Validity of the *Index of Learning Styles*," by R. Felder and J. Spurlin.
(2) "A Contribution to Validation of Score Meaning for Felder-Soloman's *Index of Learning Styles*," by M. Zywno.
(3) "A Study of the Reliability and Validity of the Felder-Soloman *Index of Learning Styles*," by T. Litzinger, S. Lee, J. Wise, and R. Felder.

Adobe Acrobat Reader is needed to access these files. It can be downloaded free from www.adobe.com.

Peer review of the Index of Learning Styles in MERLOT (Multimedia Educational Resource for Learning and Online Teaching).

"Learning and Teaching Styles in Engineering Education," *Engr. Education, 78*(7), 674-681 (1988). The article that originally defined the Felder-Silverman model and identified teaching practices that should meet the needs of students with the full spectrum of styles. The paper is preceded by a 2002 preface that states and explains changes in the model that have been made since 1988.

"Reaching the Second Tier: Learning and Teaching Styles in College Science Education," *J. College Science Teaching, 23*(5), 286-290 (1993). An article that explains the learning style preferences and their implications for teaching.

Additional information and references on learning styles.

Richard Felder's home page. Links to Dr. Felder's education-related papers, columns in *Chemical Engineering Education*, handouts for students, and information about workshops.

The Visual-Spatial Learner

A wonderful new book by Linda K. Silverman, *Upside-Down Brilliance: The Visual-Spatial Learner*, discusses the characteristics, strengths, and challenges faced by people who are right-brain dominant thinkers (a category that includes global learners). The book is warm, funny, practical, and truly inspirational. If you have found yourself out-of-step with the educational mainstream in school or college, or you are a parent or a teacher who wants to do a better job of dealing with students who are, I strongly recommend this book. You can order it on-line from The Gifted Development Center or call the Center at (1-888-GIFTED1).