



Teaching to a Variety of Learning Styles

For all Pedagoggles: <http://www.georgianc.on.ca/staff/ctl/publications/pedagoggles>

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Lens on Learning Theory

In this pedagoggle, we briefly examine two dimensions of learning styles: sensory preferences, and brain-dominance. These are only two of many aspects that contribute to learning styles. For a more comprehensive look at various dimensions of learning preference, see Hayden (2006).

Methods of teaching, ways of representing information, and personality characteristic all affect learning and affect different learners differently. Thinking about learning styles can lead a teacher to consider different ways of teaching, and that is good. An effective teacher needs to vary techniques and to have an armamentarium of teaching methods and learning activities that can be drawn upon ... to facilitate maximum learning for as many students as possible. (Mckeachie, 1995)

Sensory preferences are the most common way to discuss learning style, but only relate to the way learners prefer to take in information, not how they process it.



Auditory Learners remember information presented orally and prefer to talk about information or hear someone else talk about it.



Visual Learners remember visual details and prefer a visual representation of information (charts, diagrams, written instructions).



Kinesthetic Learners learn by doing and prefer learning that involves movement, active participation, and concrete objects.

Brain-dominance research shows that learners' dominant side of the brain affects how they process information and engage in mental activities (i.e. computations; reasoning, developing concepts; organizing, summarizing and analyzing information).

Left-Brain Dominant



- Processes information in a linear fashion (from part to whole –details first)
- Approaches learning in a sequential and logical manner and absorbs new information by connecting it to previous information
- Enjoys learning facts and focusing on details
- Expresses themselves well using words

Right-Brain Dominant



- Processes information holistically (from whole to part – big picture first)
- Approaches learning in a random and intuitive manner
- Enjoys abstract ideas and considering possibilities
- Expresses themselves creatively better than using words

Reflection on Practice

1. What are the characteristics of your preferred learning style, and how does that impact on your teaching?
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2. Which learning-style needs are best met with your teaching methods? Which learning-style needs are not met particularly well?
3. How can you encourage your students to strengthen the skills needed to function in a learning environment that is not suited to their predominant style?

Expanding Your Teaching Toolkit

It is impossible to teach based on students' individual preferences. However, including a variety of instructional strategies will improve everyone's learning. It is important for students to adapt to a variety of learning situations, so it is also useful to provide suggestions and structures to support learning weaknesses. Below are a number of ideas for engaging learners as well as strategies for students to apply.

Auditory Learners



Ways to engage auditory learners

- Provide opportunities for **discussion**
- Have students **explain** step by step processes verbally as they are working through a task or problem
- Provide **oral as well as written instructions** for assignments and learning tasks

Learning strategies for auditory learners

- Read the textbook material and your notes **out loud** or into a tape recorder
- **Discuss** course ideas with your peers (study group or study buddy)
- **Talk** your way through problems step by step
- Invest extra time and energy in trying to understand diagrams, charts, and other visual representations of learning materials
- Tape record lectures
- Talk to someone else about what you have learned

Visual Learners



Ways to engage visual learners

- Provide opportunities for students to represent ideas and concepts using **visual organizers** (i.e. mind maps, diagrams, graphs)
- Use **visuals** to reinforce concepts (pictures, diagrams, flow charts, concept maps, schematics, timelines, videos, props, wall charts & posters)
- Use **colour coding** to show connections whenever appropriate
- Create **charts or tables** that students can use as graphic organizers
- Provide written as well as oral instructions for assignments and learning tasks
- Use **metaphors** or descriptive passages to reinforce a concept
- Distribute lecture guides to help students focus in on important information

Learning strategies for visual learners

- **Draw** visual representations of topics, notes, and concepts
- Convert notes into chart or matrix formats
- Use **mind-mapping** to depict connections between various aspects of a topic
- Create **mental images** to various concepts and chunks of information
- Use **highlighting** to organize ideas
- Create **post-it notes** with key information to review for tests
- Invest extra energy in trying to listen in lectures and capture the main points in writing
- Mark up the margins of your textbooks and lecture notes with key words, **symbols** etc.
- Look at instructor to help you focus on what they are saying

Kinesthetic Learners



Ways to engage kinesthetic learners

- Give students **opportunities to move around** during the class (use role plays, student demonstrations etc.)
- Use **concrete objects** as part of the teaching/learning process (post-it notes, flipchart markers, flash cards, props, index cards, puzzle pieces)
- Have students **build models** to represent a concept
- Take learning **outside of the classroom** (field trips, scavenger hunt, tour, community activity, workplace activity)
- Distribute note-taking guides to provide a structure for note-taking

Learning strategies for kinesthetic learners

- **Take notes** during lectures and group discussions
- Transfer notes to **cue cards** or type up notes on the computer
- Go on **“thinking walks”**. Walk while you try to organize an assignment or try to study information for a test
- Book a discussion room, and write key points onto a **chalkboard**, easel board or other large writing surface

Left-Brain Dominance



Ways to engage learners who are left-brain dominant

- Give students **“To Do” lists** so they have a clear idea of everything they need to do
- Provide and follow **step by step procedures** initially when solving problems
- **Connect learning** to real world applications. Use case studies.
- Provide **examples** of concepts and procedures
- Explain how new information connects to previous information
- Be very **clear on details and expectations** and be patient with “detail” questions – What are you looking for? When is it due? What are the most important pieces?

Learning strategies for left-brain learners

- Have someone **proofread** your assignments for the big picture elements – coherence, meaning, completeness of ideas.
- Review the **outline of a chapter** to see all the various pieces and how they fit together
- Take time to **identify connections** between various pieces of learning (draw a mind-map, use symbols in textbook and notes)

Right Brain Dominance



Ways to engage learners who are right-brain dominant

- Provide students with a **topic overview** as well as an outline/agenda for the class
- Tell students at the end of a class **what is coming next** and how they can prepare
- Provide opportunities for **brainstorming, discovery, and problem solving**
- Ask learners to **find connections** between theories and real world applications
- Give students opportunities to demonstrate learning creatively (i.e. visuals, music, art)
- Create experiences that involve students emotionally in the topic
- Take time to explain the big picture expectations for assignments and be patient with **big picture questions** – Why does this matter? How does it relate?

Learning strategies for right-brain learners (next page)

Learning strategies for right-brain learners

- Make **To Do lists**. Write things down so you will remember them.
- Use **colour-coding** to sequence information related to learning and assignments (i.e. blue for step one of a project, green for step two)
- Have someone **proofread** your assignments for the structural elements (spelling, punctuation, grammar, organizational pattern)
- **Skim** textbook chapters before coming to class to get an overview of the topic.
- Check with your instructors to make sure you are on the right track with assignments

More Information and Ideas

Online Inventories

1. Hemispheric Dominance Inventory (L/R)
 - a. <http://www.mtsu.edu/~studskl/hd/learn.html>
 - b. <http://brain.web-us.com/brain/braindominance.htm>
2. Sensory Learning Style (Auditory, Visual, Tactile/Kinesthetic)
 - a. <http://www.metamath.com/lswweb/dvclearn.htm>
 - b. <http://www.vark-learn.com/english/page.asp?p=helpsheets>
3. Multiple Intelligences (8 intelligences)
 - a. <http://www.ldrc.ca/projects/miinventory/miinventory.php>
4. Index of Learning Styles (ILS)
 - a. <http://www.engr.ncsu.edu/learningstyles/ilsweb.html>

Other Information Resources

- Hayden, B. (2006). Teaching to variation in learning. Brown University. Retrieved November 2009 from http://www.brown.edu/Administration/Sheridan_Center/docs/varia_learn.pdf
- McKeachie, W. J. (1995). Learning styles can become learning strategies. *The National Teaching & Learning Forum* 4(6). University of Michigan. Retrieved November 2009 from <http://www.ntlf.com/html/pi/9511/article1.htm>
- Montgomery, S.M., & Groat, L.M. (1998). Student learning styles and their implications for teaching. Center for Research on Learning and Teaching: The University of Michigan. Retrieved November 2009 from http://www.crlt.umich.edu/publinks/CRLT_no10.pdf
- University of Western Ontario. (2009). *Learning styles: Expanding your preferences*. Retrieved November 2009 from <http://www.sdc.uwo.ca/learning/index.html?styles>