

“How Do I Address Learning Styles in My Course?”

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Introduction

Much ink has been spilled over the value of identifying student learning styles. Below is a quick summary of two of the leading theories on learning styles as well as some practical tips for implementing learning-style sensitivity into your classes. Following these tips is a list of online and print resources for more tools and information on learning styles.

Learning Styles

Learning style research includes a wide variety of models for categorizing the diverse ways that people acquire new knowledge. [Some models](#) identify learning style based on people’s preferred input sense: visual, aural, and tactile (or kinesthetic). While this identification is important, a complete understanding of the different ways in which people learn requires an understanding of how we process information once we have observed it. Below is a brief introduction to two popular models for explaining how people learn new information.

The Myers-Briggs Type Indicator™

Personality type has been shown to have a strong association with the ways in which we assimilate new knowledge. Therefore the [Myers-Briggs Type Indicator™](#), based on Carl Jung’s concept of archetypes, has been widely used to classify human learning preferences. (The dimensions for the Myers-Briggs Type Indicator™ are summarized in Table 1). For example, “Extroverted” students may be more comfortable with group activities where “Introverted” students are typically better equipped to work on their own. People who fall under the “Sensing” archetype tend to respond well to routine and dealing with facts where those who are identified as “Intuitive” tend to learn by impressions ([Montgomery/Groat 1998](#)). Anthony Grasha has found that this association between personality type and learning style describes a potential obstacle in the higher education classroom since most college faculty are identified as “Introverted” and “Intuitive” where most college students are identified as “Extroverted” and “Sensing.” (Grasha 1996).

Avoid Favoritism

Classes that feature only one mode of instruction may inadvertently cater to some learners and unfairly challenge others. Ultimately, all learners are shortchanged by a one-dimensional approach. Variety of instructional strategy insures that all students are treated fairly and no single population receives preferential treatment.

Table 1 – Personality Dimensions of the Myers-Briggs Type Indicator™

Orientation to Life: Extroverted/Introverted

Perception: Sensing/Intuitive

Decision Making: Thinking/Feeling

Attitude to the Outside World: Judgment/Perception

Kolb/McCarthy Learning Cycle

The Kolb/McCarthy learning-styles model describes four distinct learning modes. These modes are based on the different ways we perceive and process new information. These modes include (1) reflective observation, (2) abstract conceptualization, (3) active experimentation, and (4) concrete experience. Kolb claims that while individuals tend to favor one mode over the others, all learning involves a cycle through each of the four modes. Furthermore, Kolb asserts

Student Led Activities

One strategy for addressing learning style differences is to allow for student-led activities. The more control students have in the classroom, the more they will be asked to actively adapt material to their own unique preferences.

that the richest and most meaningful learning experience should consciously engage each of the four modes. This process will usually involve taking everyone, even the instructor, out of their comfort zone. Kolb’s research associates research disciplines with particular learning modes. For example, the humanities tend to learn through reflective observation while the physical sciences rely more on abstract conceptualization. However, Kolb’s research suggests that our orientation on the learning cycle is not fixed. Rather than seeing ourselves as genetically bound to one or the other mode, the Kolb/McCarthy

cycle encourages us to embrace the entire cycle. Kolb warns that the danger of ignoring our diverse approaches to learning is that we can produce shallow, mono-dimensional thinking and weaken the impact on our students and our discipline as a whole. “If [learning occurs] by suppression of one mode and/or dominance by another, learning tends to be specialized around the dominant mode and limited in areas controlled by the dominated mode.” (Kolb 1984, pg 31)

Now What?

Tip 1: Balance and Variety

All learning styles researchers agree that the best strategy is to diversify your teaching methods. Doing so will insure that every student will be equally challenged and accommodated. Below is a list of classroom activities organized by David Kolb’s learning modes. While individual students and instructors will naturally gravitate to one of these modes, it is important to include activities from each of the modes. Remember that Kolb asserts that true learning involves a cycle through each of these modes.

Table 2 – Kolb’s Learning Modes and Associated Classroom Activities

Learning Mode	Classroom activity
Concrete Experience	open ended problems, student presentations, design projects, subjective exams, simulations
Reflective Observation	motivational stories, group discussion, group projects, subjective tests, field trips
Abstract Conceptualization	lectures, textbook reading, demonstrations by the instructor, independent research, objective exams
Active Experimentation	Homework problems, computer simulations, field trips, individuals’ reports, demonstrations

While varying your methods is important, you can also include balance and variety within a single method. Consider lecture, for example. Auditory learners, introverted students, and students who excel at abstract conceptualization will typically respond well to traditional lectures. But lectures needn't be confined to the stereotypical monologue with students playing the role of passive audience. Engage visual learners in your lectures by including charts, diagrams, gestures and picturesque language in your presentation; engage tactile learners with handouts that require students to fill in information from the lecture. Social learners will appreciate some discussion mixed into the lecture. Balance the social component of group work and field experiences with time for individual reflection on the experience through journal writing or independent lab reports. Conversely, balance the individual nature of reading and writing assignments with opportunities to discuss and synthesize the assignments in groups. Also consider your graded assignments. Is there balance and variety in the ways that students earn grades?

Think-Pair-Share

This device is easy to implement in a variety of situations and engages a range of learning styles at once. Pose a question in class and ask students to (1) write their thoughts individually in their notes, (2) pair up to discuss what they wrote with a classmate, and then (3) share their discussion to the class.

Tip 2: Awareness

Be aware of you. Most instructors teach the way they would like to be taught. Therefore it is important for instructors to understand their own learning preferences and how these might relate to their students' preferences as well as how they might affect chosen teaching methods. *Be aware of them.* It is also important to be aware of your students' preferences. You can have them take formal assessments (several online options can be found below). You can also make informal observations about individual student reactions to various class activities. Ask students for feedback on various activities such as lecture and group work and look for patterns in their responses.

Help them be aware of them. Students will be more successful if they understand their own learning preferences. For example, visual students often digest a lecture with more success if they take the time to picture or diagram the concept being presented. Encourage students to discover their own learning preferences, either formally or informally, and discuss strategies for applying their preferences to your course material.

Tip 3: Problem Solving

Understanding learning style differences can give insight into student performance. If a student or an entire class does well on one exam and poorly on another exam, learning style sensitivity can sometimes explain where students got off course. What teaching strategies did you employ for the material leading up to each exam? How did the format of the exams differ?

Online Resources

Learning Styles Inventories

Below is a list of online tools for taking learning style inventories of yourself and/or your students. Most of these tools are free. The official Myers-Briggs test offers three levels of payment options and the Learning-Styles-Online site offers a free version as well as some additional services for a fee.

Myers & Briggs Foundation -- www.MyersBriggs.org

This website has a wealth of information, references, and links including three different ways to take the Myers-Briggs Type Indicator (MBTI) test. The first type of test is administered by trained counselors. The second type features an online test and a 1-hour phone consultation with a counselor. The third type (www.MBTIComplete.com) is completely online and is the least expensive.

HumanMetrics -- www.humanmetrics.com/cgi-win/JTypes2.asp

This site features a free “knock-off” version of the MBTI composed of 72 Yes/No questions. It’s a little “low-budget” but it has some interesting links that compare your results with relevant careers and famous personalities.

Learning-Styles-Online -- www.learning-styles-online.com

This site features a seven-style model: visual-spatial, aural-auditory, verbal-linguistic, physical-kinesthetic, logical-mathematical, social-interpersonal, solitary-intrapersonal. The site includes descriptions of each style description and a free inventory. The inventory produces a graphic representation of your preferences and allows you to compare results with others in your demographic. For a fee you can have your students’ inventory results emailed to you.

VARC – A Guide to Learning Styles -- <http://www.varc-learn.com/english/index.asp>

This site features a free questionnaire that identifies users as Visual, Aural, Read/write, or Kinesthetic (VARC). This questionnaire allows the user to make multiple responses and potentially find more than one preference. After the short test, users can review brief explanations and tips for their learning preference. Users can also order detailed reports for a fee.

The Visual-Spatial Resource -- www.visualspatial.org

Founded by Linda Silverman, one of the leading researchers in the area of learning styles, this website includes a free inventory that identifies whether a person is visual-spatial or verbal-sequential.

General Learning Style Resources

McKeachie, W. J. (1995). Learning Styles Can Become Learning Strategies. *The National Teaching and Learning Forum* 4 (6).

<http://www.ntlf.com/html/pi/9511/article1.htm>

In this short article, Wilbert McKeachie, one of the foremost researchers in faculty development, takes a critical look at learning style concepts. McKeachie, like Kolb, asserts that learning styles are learned preferences that can change over time and warns us against pigeonholing ourselves or our students into fixed labels.

Montgomery, S. M. & Groat, L.N. (1998). Student Learning Styles and Their Implications for Teaching. *CRLT Occasional Paper No. 10*, University of Michigan.

http://www.crlt.umich.edu/publinks/CRLT_no10.pdf

This occasional paper from the University of Michigan's Center for Research on Learning and Teaching gives an overview several leading models and applies them to the university classroom.

Smith, M. K. (2001). 'David A. Kolb on experiential learning', *the encyclopedia of informal education*.

<http://www.infed.org/biblio/b-explrn.htm#learning%20style>

Mark Smith takes a critical look at Kolb's approach to learning styles. He quotes several authors which have taken issue with Kolb's model. Smith also makes suggestions for further reading.

Additional References

Felder, R.M., & Silverman, L.K. (1988). Learning styles and teaching styles in engineering education. *Engineering Education*, 78(7), 674-681.

Grasha, A.F. (1996). *Teaching with style: A practical guide to enhancing learning by understanding teaching and learning styles*. Pittsburgh: Alliance Publishers.

Kolb, D.A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.

Myers, I.B., & McCaulley, M.H. (1986). *Manual: A guide to the development and use of the Myers-Briggs type indicator* (2nd ed.). Palo Alto, CA: Consulting Psychologists Press.