

Learning Styles and Multiple Intelligences

Unit: Career Exploration

Problem Area: Career Planning and Job Seeking

Lesson: Learning Styles and Multiple Intelligences

- **Student Learning Objectives.** Instruction in this lesson should result in students achieving the following objectives:

- 1 Identify and describe your learning style and multiple intelligence preference.**
- 2 Apply your knowledge of learning styles and multiple intelligences to enhance learning potential and career decision making.**

- **Resources.** The following resources may be useful in teaching this lesson:

E-unit(s) corresponding to this lesson plan. CAERT, Inc.
<http://www.mycart.com>.

Bryant, Lindsay, and Nicole Jones. "Learning Styles," *Study Skills for College Students*. University of Georgia. Accessed May 11, 2012.
<http://snjones.myweb.uga.edu/page2.htm>.

"Career Interest Game," *Career Center—University of Missouri*. Accessed May 11, 2012. <http://career.missouri.edu/students/majors-careers/skills-interests/career-interest-game/>.

Index of Learning Styles. Accessed May 10, 2012. <http://www4.ncsu.edu/university/lockers/users/f/felder/public/ILSpage.html>.



“Learning Styles / MI Links,” *LdPride.net*. Accessed May 10, 2012.
http://www.ldpride.net/learning_style_links.html.

“Overview of Learning Styles,” *learning-styles-online.com*. Accessed May 10, 2012. <http://www.learning-styles-online.com/overview/>.

Saenz, Sheila. “Learning Styles,” *CTE Online*. Accessed May 10, 2012.
<http://www.cteonline.org/portal/default/Curriculum/Viewer/Curriculum?action=2&cmobjid=202641&view=viewer&refcmobjid=13304>.

Smith, Mark K. “Howard Gardner and Multiple Intelligences” (2002, 2008), *Infed—The Encyclopedia of Informal Education*. Accessed May 10, 2012.
<http://www.infed.org/thinkers/gardner.htm>.

■ **Equipment, Tools, Supplies, and Facilities**

- ✓ Overhead or PowerPoint projector
- ✓ Visual(s) from accompanying master(s)
- ✓ Copies of sample test and/or other items designed for duplication
- ✓ Materials listed on duplicated items
- ✓ Computers with Internet access
- ✓ Classroom resource and reference materials

■ **Key Terms.** The following terms are presented in this lesson (shown in bold italics):

- ▶ bodily (kinesthetic) intelligence
- ▶ interpersonal intelligence
- ▶ intrapersonal intelligence
- ▶ learning style
- ▶ linguistic intelligence
- ▶ logical/mathematical intelligence
- ▶ multiple intelligences
- ▶ musical intelligence
- ▶ naturalistic intelligence
- ▶ spatial intelligence

■ **Interest Approach.** Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

The health care industry is a fast-paced and ever-changing industry, with new technological advancements occurring regularly. Health care workers need to be flexible and continue to adapt to industry demands. Students in health science technology education must understand that, as future health care workers at all levels, they need to be lifelong learners. Identifying and understanding their personal learning style will allow health science technology students to maximize

their learning potential, in school and possibly in the workplace, by helping them understand the conditions and environments in which they learn best. Health science technology students can use knowledge of their individual learning style to enhance, improve, and facilitate their learning. Since learning style often correlates with interests and areas of strength and skill, students might also use knowledge of their learning style in making career decisions.

Facilitate a class discussion. Ask students to describe the classes in which they feel they learned best. Ask them to give examples and to try to explain why they learned more in certain classes. Ask them what styles the instructors used. Ask the students what study skills they use to facilitate their learning. Ask them to describe their study habits. How do they learn best? What helps them remember material for tests? By what methods do they prefer to learn?

Introduce the concept of “lifelong learning.” Inform students that success in the health care industry depends heavily on a person’s ability to adapt, change, and continually learn new skills or new ways of completing tasks. Introduce the topic of learning styles. Briefly discuss how knowledge of personal learning styles can provide valuable information that may facilitate and improve learning potential in school and on the job.

Help students meet the objectives of this lesson by using any variety of learning styles surveys/inventories that are available in print format or online. Research different learning style inventories for one that works best for your facility. The more scientifically reliable inventories typically involve a fee. However, some are available free of charge. (See Resources.)

CONTENT SUMMARY AND TEACHING STRATEGIES

Objective 1: Identify and describe your learning style and multiple intelligence preference.

Anticipated Problem: What is your learning style and multiple intelligence preference?

- I. Knowledge of learning style and multiple intelligence preference can enhance learning potential and assist with career decision making.
 - A. According to Bryant and Jones (see Resources), a **learning style** is a particular way in which the mind receives and processes information. Their well-organized website cites a book titled *Keys to Study Skills: Opening Doors to Learning*, by C. Carter, et al. (1999). It is an excellent resource that presents study skills in a way that supports the individual’s learning style and multiple intelligences.

1. There is no “best” way to learn. There are many different learning styles, and different styles are suited to different people and/or situations.
 2. Everyone has a mix of learning styles, typically with one dominant style.
 3. Learning styles guide:
 - a. The way we learn
 - b. The way we internalize experiences
 - c. The way we recall information
 - d. The words we use
- B. Why are learning styles important to the learner?
1. When the learner knows and understands his or her learning style, the learner is more capable of selecting suitable techniques that may improve learning.
 2. Learning styles are not fixed; they can be developed. Less dominant areas can be strengthened.
 3. Research indicates that different learning styles use different parts of the brain. By involving more of the brain during learning, we can remember more of what we learn.
 4. Using multiple learning styles (i.e., trying study skills that are typical of other learning styles) may improve learning and may make learning easier.
 5. Learning styles are often closely related to our working style and to our skills and strengths. This should be a major consideration in career choice.
 6. Knowledge of dominant and less dominant learning styles should not discourage students from pursuing careers in which they are interested.
- C. What are the specific learning styles?
1. Visual learners learn through seeing.
 2. Auditory learners learn through listening.
 3. Tactile/kinesthetic learners learn through moving, doing, and touching.
- D. **Multiple intelligences** are different ways to demonstrate intellectual ability.
1. American developmental psychologist Howard Gardner is a professor of cognition and education at Harvard Graduate School of Education, senior director of Harvard Project Zero, and an author. He is best known for his theory of multiple intelligences.
 2. Gardner’s theory of multiple intelligences was proposed in 1983. It presents a model that differentiates intelligence into various modalities (manners in which it is shown) rather than seeing it as dominated by a single general ability.
 3. Gardner presented several criteria for a behavior to be considered an intelligence.
- E. Eight intelligences according to Gardner
1. Often valued in educational settings:
 - a. **Linguistic intelligence**—talent for the spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals

- b. **Logical/mathematical intelligence**—the ability to analyze problems logically, carry out mathematical operations, and investigate issues scientifically
- 2. Often associated with the arts:
 - a. **Bodily (kinesthetic) intelligence**—the ability to use one’s whole body or parts of the body to solve problems
 - b. **Musical intelligence**—talent in the performance, composition, and appreciation of musical patterns
 - c. **Spatial intelligence**—the ability to recognize and use the patterns of wide space and more confined areas
- 3. “Personal intelligences”:
 - a. **Interpersonal intelligence**—the ability to understand the intentions, motivations, and desires of other people
 - b. **Intrapersonal intelligence**—the capacity to understand oneself and to appreciate one’s feelings, fears, and motivations
- 4. Eighth intelligence, added by Gardner in 1999:
 - a. **Naturalistic intelligence**—the ability to recognize, categorize, and draw upon certain features of the environment
- F. Just as there are multiple learning styles and intelligences, so are there several style and intelligence inventories.
 - 1. Students should take several inventories and compile a cumulative personal profile that meets their needs.
 - 2. Suggested sites:
 - a. Memletics Learning Styles Inventory at <http://www.learning-styles-online.com/inventory/questions.php?cookieset=y>
 - b. “What Are My Learning Strengths?” at <http://www.ldrc.ca/projects/miinventory/mitest.html>
 - c. Multiple Intelligence Inventory at http://www.uen.org/utahlink/activities/view_activity.cgi?activity_id=7119
 - d. Many other sites exist.
- G. Key areas of the brain are responsible for different learning styles. See <http://www.learning-styles-online.com/overview/> for more information.
- H. Practical suggestions pertaining to each learning style can be found at http://www.ldpride.net/learning_style_work.html.
- I. For common pursuits, phrases, and learning techniques broken down by seven different learning styles (these are similar to the abovementioned intelligences, minus the naturalistic intelligence), go to <http://www.learning-styles-online.com/overview/>, and select the particular learning style.
 - 1. Present the information from the above link, taking time for each learning style.

2. Students should note which phrases they use most frequently and which seem very foreign. Strange expressions should be noted, in that they may perhaps represent or point to an area of weakness or an area yet to be developed.

Teaching Strategy: Use VM–A and VM–B. Students can be encouraged to research learning styles on the Internet. They can also be instructed to take a learning styles survey/inventory that may be available at no charge on the Internet. Students can also be requested to take the Memletics Learning Styles Inventory. Students should be asked to evaluate the results of the learning styles inventory. Do they believe the inventory accurately described their learning style? Students can be asked to write an essay on whether the learning styles inventory accurately described their learning style. They should offer suggestions for improving their own learning potential in class based on knowledge of their dominant learning style.

Objective 2: Apply your knowledge of learning styles and multiple intelligences to enhance learning potential and career decision making.

Anticipated Problem: How do you apply your knowledge of learning styles and multiple intelligences to enhance learning potential and career decision making?

- II. Applying knowledge of learning styles and multiple intelligences
 - A. When they are studying, students should be encouraged to consider what style or intelligence they are using and to assess whether that strategy is effective.
 1. Encourage students to use study strategies from various style and intelligence areas to strengthen their abilities and use more areas of their brain to learn material and concepts. See: <http://snjones.myweb.uga.edu/page2.htm>.
 2. Students should know what intelligence preference will be expected of them on a test and practice that method.
 - B. When considering career decisions, students should do so with knowledge of their assessed learning styles and intelligences.
 1. Career choice / job title descriptions should be searched for parallel strengths and links, as these career areas may be natural fits for the learner.
 2. Career areas presenting information that parallels or links to other learning styles and intelligences outside the learner's assessed strengths should be noted, in that these careers may require an interested student to strengthen and develop some areas first.
 3. As the learner's career choice develops, the learner should be on the lookout for an environment that suits his or her style the best. This fit will allow the learner to work more effectively on work teams, excel at on-the-job training, and learn new techniques.
 - C. Students should use data from learning style and multiple intelligence assessments and couple it with data from interest area assessments, such as

Illinois workNet (http://www.illinoisworknet.com/vos_portal/Industry/en/Home/HealthCare/).

1. On this site, students can:
 - a. Take an interest inventory that reveals interests by career cluster
 - b. Review the career pathways and programs of study in the cluster of indicated interest
 - c. Learn more about specific careers in a cluster
 - d. Research associated programs of study
2. Students then should document their research with their counselor in their ICP or senior portfolio. Career counselors can assist with verifying and documenting student research and can assist with specific educational and training options.

Teaching Strategy: Use VM–C, VM–D, and VM–E. Ask students to write about whether they feel their learning style may influence their interest in certain careers. Or, ask them to write about which careers they believe they may be successful in because of their learning style and intelligence preference. Assign LS–A.

- **Review/Summary.** Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. If a textbook is being used, questions at the ends of chapters can also be included in the Review/Summary.
- **Application.** Instruct students to take the Memletics Learning Styles Inventory or other inventory. Use images, pictures, photos, posters, or models of brain anatomy to show the areas of the brain associated with each learning style. Use the visual masters and lab sheet to apply the information presented in the lesson.
- **Evaluation.** Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance on the application activities. A sample written test is provided.

■ **Answers to Sample Test:**

Part One: True/False

1. T
2. F
3. T
4. F
5. T
6. T

Part Two: Matching

1. e
2. g
3. c
4. a
5. d
6. i
7. b
8. f
9. h

Part Three: Short Answer

1. The three learning styles are visual, auditory, and tactile/kinesthetic. Visual learners learn through seeing. Auditory learners learn through listening. Tactile/kinesthetic learners learn through moving, doing, and touching.
2. The eight intelligences, as represented by Gardner, are as follows (examples will vary):
 - a. Linguistic intelligence is talent for the spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals.
Ex: Author, lawyer, public speaker
 - b. Logical/mathematical intelligence is the ability to analyze problems logically, carry out mathematical operations, and investigate issues scientifically.
Ex: Scientist, mathematician, math teacher, accountant
 - c. Bodily (kinesthetic) intelligence is the ability to use one's whole body or parts of the body to solve problems.
Ex: Dancer, stage performer
 - d. Musical intelligence is talent in the performance, composition, and appreciation of musical patterns.
Ex: Musician
 - e. Spatial intelligence is the ability to recognize and use the patterns of wide space and more confined areas.
Ex: Graphic designer, space planner
 - f. Interpersonal intelligence is the ability to understand the intentions, motivations, and desires of other people.
Ex: Salesperson, counselor
 - g. Intrapersonal intelligence is the capacity to understand oneself and to appreciate one's feelings, fears, and motivations.
Ex: Someone motivated in self-improvement
 - h. Naturalistic intelligence is the ability to recognize, categorize, and draw upon certain features of the environment.
Ex: Naturalist, biologist, forest ranger

Learning Styles and Multiple Intelligences

► Part One: True/False

Instructions: Write *T* for true or *F* for false.

- ____ 1. Knowing my learning style can help me improve my learning potential.
- ____ 2. Someone who is a visual/spatial learner learns best by hearing and listening.
- ____ 3. The term “kinesthetic” refers to movement, motion, and hands-on learning.
- ____ 4. Learners of the social/interpersonal learning style learn best when they are working alone.
- ____ 5. Learning styles often correlate to working style and to areas of strength and skill.
- ____ 6. Students tend to have more difficulty in a class that does not support their learning style.

► Part Two: Matching

Instructions: Match the term with the correct definition.

- | | |
|--------------------------------------|------------------------------|
| a. bodily (kinesthetic) intelligence | f. multiple intelligences |
| b. interpersonal intelligence | g. musical intelligence |
| c. intrapersonal intelligence | h. naturalistic intelligence |
| d. learning style | i. spatial intelligence |
| e. linguistic intelligence | |

- ____ 1. Talent for the spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals
- ____ 2. Talent in the performance, composition, and appreciation of musical patterns



LEARNING STYLES

Learning style—a particular way in which the mind receives and processes information

- ◆ There is no “best” way to learn. There are many different learning styles, and different styles are suited to different people and/or situations.
- ◆ Everyone has a mix of learning styles, typically with one dominant style.
- ◆ Learning styles guide:
 - The way we learn
 - The way we internalize experiences
 - The way we recall information
 - The words we use
 - Why are learning styles important to the learner?



- When the learner knows and understands his or her learning style, the learner is more capable of selecting suitable techniques that may improve learning.
 - Learning styles are not fixed; they can be developed. Less dominant areas can be strengthened.
 - Research indicates that different learning styles use different parts of the brain. By involving more of the brain during learning, we can remember more of what we learn.
 - Using multiple learning styles (i.e., trying study skills that are typical of other learning styles) may improve learning and may make learning easier.
 - Learning styles are often closely related to our working style and to our skills and strengths.
 - Knowledge of dominant and less dominant learning styles should not discourage students from pursuing careers in which they are interested.
- ◆ What are the specific learning styles?
- Visual learners learn through seeing.
 - Auditory learners learn through listening.
 - Tactile/kinesthetic learners learn through moving, doing and touching.
- ◆ Which style of learner are you, and how do you know?

GARDNER

MULTIPLE INTELLIGENCES

◆ *Often valued in educational settings:*

- **Linguistic intelligence**—talent for the spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals
- **Logical/mathematical intelligence**—the ability to analyze problems logically, carry out mathematical operations, and investigate issues scientifically

◆ *Often associated with the arts:*

- **Bodily (kinesthetic) intelligence**—the ability to use one's whole body or parts of the body to solve problems
- **Musical intelligence**—talent in the performance, composition, and appreciation of musical patterns
- **Spatial intelligence**—the ability to recognize and use the patterns of wide space and more confined areas



◆ *“Personal intelligences”:*

- **Interpersonal intelligence**—the ability to understand the intentions, motivations, and desires of other people
- **Intrapersonal intelligence**—the capacity to understand oneself and to appreciate one’s feelings, fears, and motivations

◆ *Eighth intelligence, added by Gardner in 1999:*

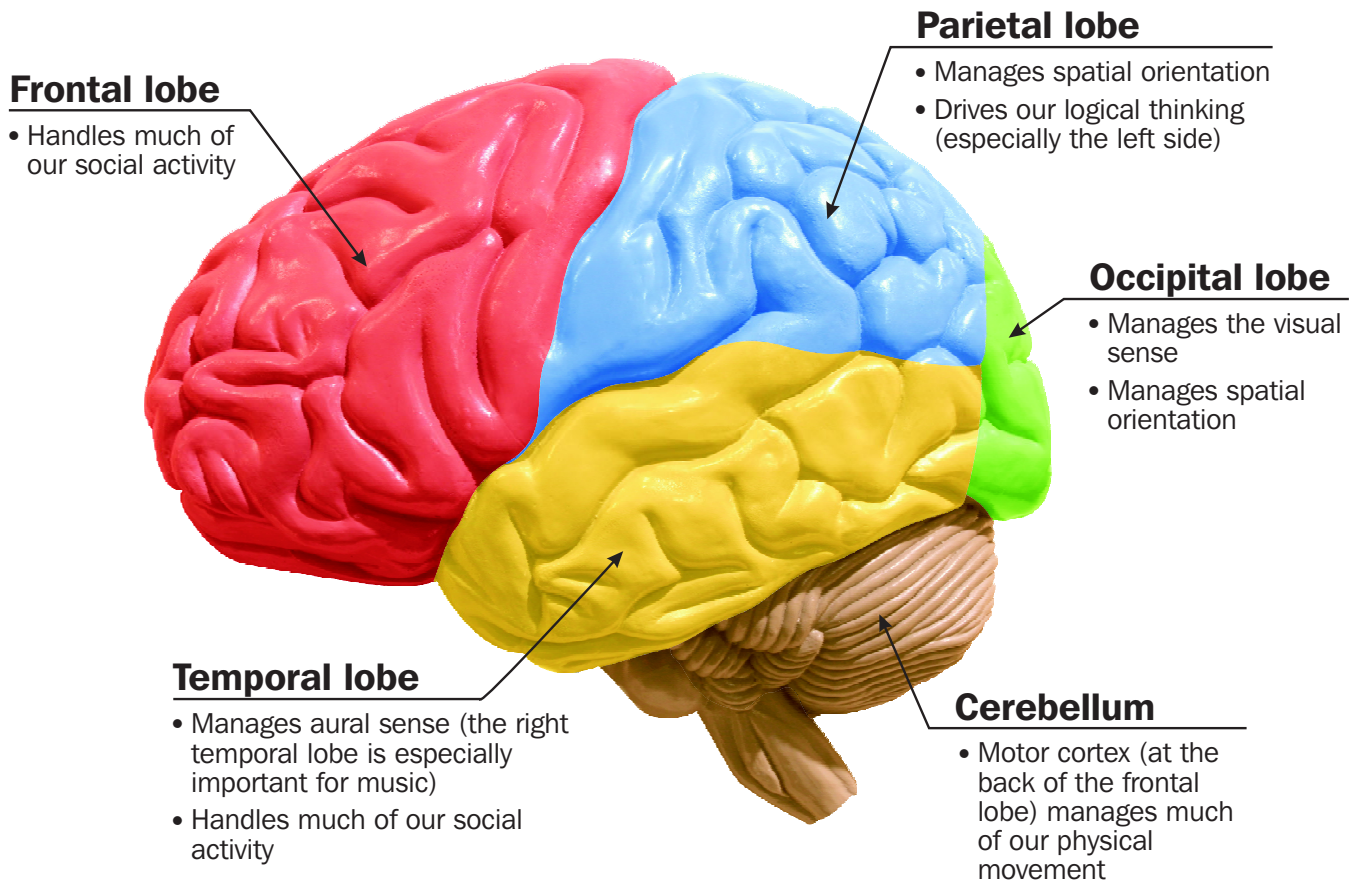
- **Naturalistic intelligence**—the ability to recognize, categorize, and draw upon certain features of the environment

STUDY TIPS ARRANGED BY INTELLIGENCES

See <http://snjones.myweb.uga.edu/page2.htm>.

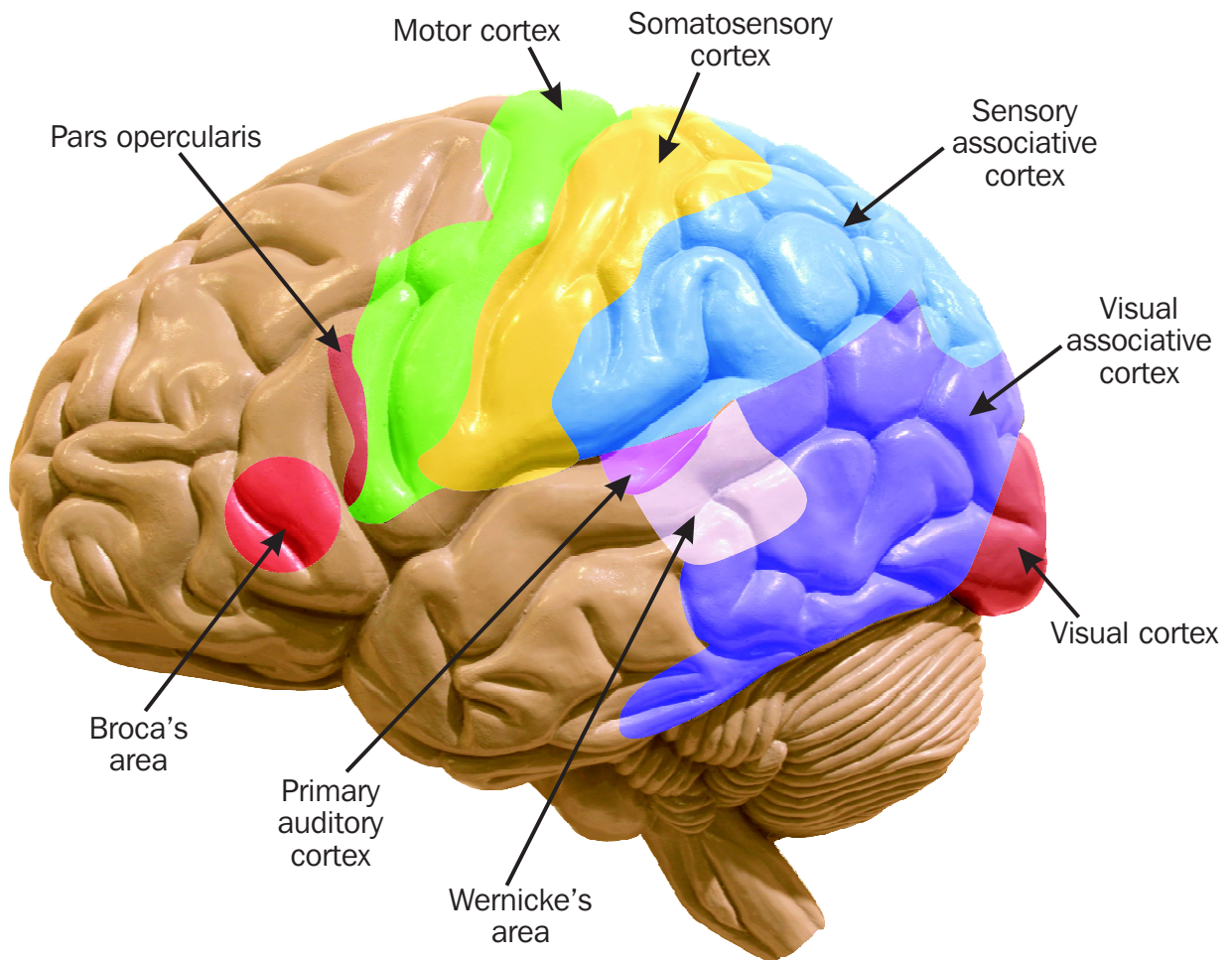


THE BRAIN AND INTELLIGENCES



Also, see <http://www.learning-styles-online.com/overview/>.

KEY AREAS OF THE BRAIN RESPONSIBLE FOR LEARNING STYLES



- ◆ Verbal intelligence is managed by the temporal and frontal lobes, especially two specialized areas called Broca's and Wernicke's areas (in the left hemisphere of these two lobes).
- ◆ The limbic system (not shown apart from the hippocampus) also influences both the social and solitary styles.

Identifying Your Learning Style

Purpose

The purpose of this activity is to identify and describe your learning style and multiple intelligence preference and to describe how this knowledge can enhance your learning potential and assist with your career decision making.

Objectives

1. Determine your learning style and intelligence area.
2. Relate your learning style and intelligence area to career decision making.

Materials

- ◆ lab sheet
- ◆ computer with Internet access
- ◆ class notes

Procedure

1. Review the material in this lesson, and then use the website resources listed below to assist with identifying your learning style and your multiple intelligence strength area. Other teacher-approved websites may also be used.
2. Make a thorough study of your learning style and your multiple intelligence area.
3. Make a detailed list of study tips in support of your strength areas. Then select two other areas where you would like to strengthen your skills, and make a list to support these.
4. Describe how knowledge of your dominant areas and other areas can enhance your learning potential and assist with your career decision making. *Use your dominant style and intelligence area to demonstrate this discovery.*



5. Describe how knowledge of your dominant areas and other areas can enhance your career decision making as well as your success on the job. *Use your dominant style and intelligence area to demonstrate this discovery.*

(Note: Demonstrations may be in the form of written reports, verbal presentations, posters, songs, movement, scientific or mathematical presentations, artful sculptures, nature snapshots or analogies, etc. There should be a wide variety of works.)

Website Resources

- ◆ Learning Styles
 - <http://snjones.myweb.uga.edu/page2.htm>
- ◆ Career Interest Game
 - <http://career.missouri.edu/students/majors-careers/skills-interests/career-interest-game/>
- ◆ Index of Learning Styles
 - <http://www4.ncsu.edu/unity/lockers/users/f/felder/public/ILSpage.html>
- ◆ Learning Styles / MI Links
 - http://www.ldpride.net/learning_style_links.html
- ◆ Overview of Learning Styles
 - <http://www.learning-styles-online.com/>
- ◆ Overview of Learning-Styles-On-line
 - <http://www.learning-styles-online.com/overview/>
- ◆ Learning Styles
 - <http://www.cteonline.org/portal/default/Curriculum/Viewer/Curriculum?action=2&cmobjid=202641&view=viewer&refcmobjid=13304>
- ◆ Howard Gardner and Multiple Intelligences
 - <http://www.infed.org/thinkers/gardner.htm>