The beginning of a new school year presents us with an opportunity to examine what goes on in our classrooms. Why are we here? What are the goals and objectives of the classes we teach? Hopefully somewhere amid the confusion of trying to get it all done, we remember that we are here so that students can learn. Content is important. However, students learning it is more important! I find that an examination of learning styles is helpful in determining ways I provide students with opportunities for learning. There are things that we can do in presenting materials, designing our courses, and making assignments. And there are things that we can remind our students to do when learning something new and difficult. The term learning styles is one that is loaded. It can mean many things to many people. This presentation will be limited to two approaches. We will quickly view sensory modes the way we intake information best: visual, auditory, or kinesthetic/tactile. Then, we will examine hemispheric dominance, the way we process that information. Are we right brained or left?

The goal of this presentation is not to teach you all there is to know about learning styles. Rather, it is intended to be a reminder that everyone processes information differently and to share a few insights. It is also important to remember that learning styles is only one piece of the puzzle of how we learn.

You may find the following resources useful.

- The PowerPoint slides used in this presentation as well as some on learning strategies can be accessed on the Internet at http://www.mtsu.edu/~studskl/ppt2e.html

- An on-line version for the hemispheric dominance inventory is available at http://www.mtsu.edu/~devstud/advisor/learn.html

- The Study Skills Help Page is the home base for the learning strategies course at MTSU. You may wish to refer you students to the page for help in study skills. http://www.mtsu.edu/~studskl (l and in Larry)

- Create online quizzes, games, reviews http://www.quia.com/

Jenson's Equation for Optimal Learning

Personal History
(beliefs, experiences, values, knowledge)
+

Present Circumstances
(environment, feelings, people, contest, goals, moods)
+

Input (5 senses)
(visual, auditory, kinesthetic, olfactory, or gustatory)
+

Processing (learning preference)
(states, left/right hemisphere, abstract or concrete)
+

Meaning
(connecting experience, data and stimuli to form conclusions and create patterns that give our lives meaning)
+

Responses (7 intelligences)
(verbal-linguistic, spatial, bodily kinesthetic, musical-rhythmic, mathematical-logical, intrapersonal, interpersonal)
=

Optimal Learning

Sensory Modality Inventory

There are eleven incomplete sentences and three choices for each. Some of those choices contain more than one option. If any one of those options seems typical of you, score that answer. All of the options do not have to apply to you. Score the three choices by rating:

3= to the answer most typical of you
2= to your second choice
1= to the one least like you

1. When I want to learn something new, I usually:
   ___ A. want someone to explain it to me.
   ___ B. want to read about it in a book or magazine.
   ___ C. want to try it out, take notes, or make a model of it.

2. At a party, most of the time I like to:
   ___ A. listen and talk to two or three people at once.
   ___ B. see how everyone looks and watch the people
   ___ C. dance, play games, or take part in some activities.

3. If I were helping with a musical show, I would most likely:
   ___ A. write the music, sing the songs or play the accompaniment
   ___ B. design the costumes, paint the scenery, or work the lighting
   ___ C. make the costume, build the sets, or take an acting role

4. When I am angry, my first reaction is to:
   ___ A. tell people off, laugh, joke, or talk it over with someone
   ___ B. blame myself or someone else, daydream about taking revenge,
   ___ C. make a fist or tense my muscles, take it out on something else, hit
       or throw things.

5. A happy event I would like to have is:
   ___ A. hearing thunderous applause for my speech or music.
   ___ B. photographing the prized picture for a sensational newspaper story.
   ___ C. achieving the fame of being first in a physical activity such as dancing,
       acting, surfing, or a sports event.

6. I prefer a teacher to: (Or as a teacher as prefer)
   ___ A. use the lecture methods with informative explanations and
       discussions.
   ___ B. write on the chalkboard, use visual aids, and assigned readings
   ___ C. require posters, models, in-service practice, and some activities
       in class.

7. I know that I talk with:
   ___ A. different tones of voice.
   ___ B. my eyes and facial expressions.
   ___ C. my hands and gestures.
8. If I had to remember an event so that I could record it later, I would choose to:
   ___ A. tell it aloud to someone or hear an audio tape recording or
   song about it.
   ___ B. see pictures of it or read a description.
   ___ C. replay it in some practice rehearsal using movements such
   as dance, playacting or drill.

9. When I cook something new, I like to:
   ___ A. have someone tell me the directions (a friend or TV show).
   ___ B. read the recipe and judge by how it looks
   ___ C. use many pots and dishes, stir often, and taste-test

10. In my free time, I like to:
    ___ A. listen to the radio, talk on the telephone, or attend a
    musical event.
    ___ B. go to the movies, watch TV, or read a magazine or book
    ___ C. get some exercise, go for a walk, play games, or make
    things.

11. If I am using equipment such as a VCR, camcorder, or computer for the first time.
    ___ A. I want someone to tell me how to use it.
    ___ B. I want to read the directions or watch someone else do it.
    ___ C. I want to jump right in and do it. I'll figure it out sooner or
    later

12. I like the classroom arranged
    ___ A. In a circle so I can interact with other students
    ___ B. In neat rows facing the instructor
    ___ C. In random order in case we have activities

To interpret your sense modality, add up you score for each letter.
Total number
A.______ auditory
B.______ visual
C.______ kinesthetic or tactile

If your highest score was
A. you learn best through listening
B. you learn best by seeing it in print or
other visual modes
C. you learn best by getting physically
involved
Visualization Exercise

Follow directions carefully. Learn the following pairs of words by repeating the members of each pair several times to yourself. For example, if the pair is CAT–WINDOW, say over and over, “cat–window,” ”cat–window.” Do not use any other memory method.

<table>
<thead>
<tr>
<th>CUSTARD</th>
<th>LUMBER</th>
<th>MOTHER</th>
<th>IVY</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAIL</td>
<td>CLOWN</td>
<td>LIZARD</td>
<td>PAPER</td>
</tr>
<tr>
<td>HAMMER</td>
<td>STAR</td>
<td>BEAR</td>
<td>SCISSORS</td>
</tr>
<tr>
<td>APPLE</td>
<td>FRECKLES</td>
<td>CANDY</td>
<td>MOUNTAIN</td>
</tr>
<tr>
<td>SLIPPER</td>
<td>ENVELOPE</td>
<td>BOOK</td>
<td>PAINT</td>
</tr>
<tr>
<td>CANDLE</td>
<td>SHEEPSKIN</td>
<td>TREE</td>
<td>OCEAN</td>
</tr>
</tbody>
</table>

Now without looking back, try to remember as many of the pairs of words as you can.

ENVELOPE _____________ JAIL _____________
FRECKLES _____________ IVY _____________
TREE _____________ CANDLE _____________
CANDY _____________ BOOK _____________
SCISSORS _____________ LIZARD _____________
CUSTARD _____________ HAMMER _____________

Now learn the following pairs by visualizing a mental picture in which the two objects in each pair are in some kind of vivid interaction. For example, if the pair is CAT–WINDOW, you might picture a cat jumping through a closed window with glass shattering all about. Just make up a picture and do not use any other memory technique. The more action your picture holds, the easier it will be to recall.

SOAP | MERMAID | MIRROR | RABBIT
LAKE | FOOTBALL | HOUSE | DIAMOND
PENCIL | LETTUCE | LAMB | MOON
CAR | HONEY | BREAD | GLASS
CANDLE | DANCER | LIPS | DONKEY
FLEA | DANDELION | DOLLAR | ELEPHANT
Now turn to the next page . . . no looking back . . . and try to remember as many pairs as you can.

| CANDLE   | _________ | DOLLAR   | _________ |
| FLEA     | _________ | CAR      | _________ |
| BREAD    | _________ | LIPS     | _________ |
| MIRROR   | _________ | PENCIL   | _________ |
| LAMB     | _________ | SOAP     | _________ |
| LAKE     | _________ | HOUSE    | _________ |
**Learning Styles**

**How Does Your Brain Process Information?**

*Questionnaire*  
*Adapted with permission from "Learning Style Preferences" by Adele Ducharme and Luck Watford, Valdosta State University.*

Directions: Check the answer that most closely describes your preferences.

1. When you walk into a theater, classroom, auditorium, if there are no other influential factors, which side do you prefer?
   ___ a. right
   ___ b. left

2. When taking a test, which do you prefer that the questions be?
   ___ a. objective (true/false, multiple choice, matching)
   ___ b. subjective (discussion or essay questions)

3. Do you often have hunches?
   ___ a. yes
   ___ b. no

4. When you have hunches, do you follow them?
   ___ a. yes
   ___ b. no

5. Do you have a place for everything and everything in a place?
   ___ a. yes
   ___ b. no

6. In learning a dance step, is it easier for you to:
   ___ a. learn by imitation and getting the feel of the music?
   ___ b. learn the sequence of movements and talk your way through the steps?

7. Do you like to move your furniture several times a year, or do you prefer to keep the same arrangement?
   ___ a. keep
   ___ b. move

8. Can you tell approximately how much time has passed without a watch?
   ___ a. yes
   ___ b. no

9. Speaking in strictly relative terms, is it easier for you to understand:
   ___ a. algebra?
   ___ b. geometry?
10. Is it easier for you to remember people’s names or to remember people’s faces?
   ___ a. names
   ___ b. faces

11. When given the topic "school," would you prefer to express your feelings through
    drawings or writing?
   ___ a. drawing
   ___ b. writing

12. When someone is talking to you, do you respond to the word meaning, or do you
    respond to the person's word pitch and feelings?
   ___ a. word meaning (what is said)
   ___ b. word pitch and feeling (how it is said)

13. When speaking, do you use few gestures, or do you use many gestures (that is do
    you use your hands when you talk)?
   ___ a. few gestures (very seldom use hands when you talk)
   ___ b. many gestures (use hands)

14. My desk or where I work is
   ___ a. neat and organized
   ___ b. cluttered with stuff that I might need

15. Is it easier for you to read for main ideas or read for specific details?
   ___ a. main ideas
   ___ b. specific details

16. Do you do your best thinking lying down or walking around or sitting erect?
   ___ a. sitting erect
   ___ b. lying down or walking around

17. Do you feel more comfortable saying/doing humorous things or saying/doing well
    reasoned things?
   ___ a. humorous things
   ___ b. well reasoned

18. In math
   ___ a. I can explain how I got the answer
   ___ b. I can get the answer but cannot explain how
19. Which format do you like better?

____a. _______b.

20. Sit in a relaxed position and clasp your hands comfortably in your lap. Which thumb is on top?

___a. left
___b. right
___c. parallel

21. When it comes to “bending the rules” do you feel:

___a. rules are to be broken
___b. rules are to be followed
___c. progress comes through challenging rules when necessary (both sides)

22. What does your work area look like?

_____a. _______b.

Directions For scoring Left Brain/Right Brain Preference
Using the diagram of the brain on the next page, color in the section that corresponds to your answer. For example, if your answer for question 1 is “a”, you will find 1a on the right side of the brain. Color in this section. If your answer is “c” or you really can’t distinguish between a and b color both a and b for that question.
**Linear**
part to whole-piece by piece-lines them up arranges in logical order and draws conclusion-- one thing built on another

**Holistic**
whole to part--holistically--starts with the answer sees the big picture not details--often has difficulty with sequential thought

**Symbolic**
has no trouble with symbols--remember word are symbols as are letters-

**Concrete**
wants things concrete-- let me touch it see the real object. May have had trouble learning to read with phonics--real money , apples to figure out problem in math Needs to know why??

**SOME SUGGESTIONS**
lecture drives right brained crazy--usually it’s piece by piece--this is why reading material ahead is necessary and why surveying is a must before reading a text and taking tests

right dislike objective test--they should make up practice tests to study for tests
math-- in order to keep columns , may need to turn paper sideways and write numbers between lines to keep in line

Instructors need to make sure they give overview before class-- goals and objectives need to be clearly stated to students--left brain needs closure
Check often to see if learning is taking place--

create opportunities for hand-on activities-- use real as often as possible -- draw out pictures instead of words(mapping)
draw out math problem -note use in real world--use manipulatives

Instructors need to use as may concrete examples and hands on activities as possible
Search out interactive web sites
Sequential
makes lists and checks off when done -- goes in order actually read direction-- part a to part b-- organized --everything in order- a place for everything outlines in order to plan a paper or project

Random
flits from one task to another-- may get more done, but not necessarily the things that should be done spontaneous--thrive on change--open-minded and flexible doesn't read directions-- with rules, usually doesn't follow( easier to get forgiveness than permission) outlines after paper is written if an outline is required

Logical
piece by piece in solving a math problem or any problem-- come to a logical conclusion--want rule to follow-- make decisions based on proof not feelings

Intuitive
may know the right answer, but not be able to explain how you got it--decisions based on feeling emotional and sensitive to feelings

The "world" thinks that everything is sequential--may not ever be for right brain. To learn something in sequence try using color--even to the extent of spelling, a different color for each letter(right brain sensitive to color) In test taking, survey for the big picture and do the easy questions first. In doing sequential task try standing up -- moving around. It is a must for right brained people to make list and prioritize. **Instructors** should vary pace and method of presentation. May help by having major project turned in parts.

right brain-- knows the Label in the Margin system works, but trouble explaining why ( really doesn't care why if it works!)--knows answer to math problem doesn't know why-sequence? )- try working a problem backwards or subbing smaller numbers-- drawing it out- true/false mc intuit right answer--often misses logic of tricky question Needs to study test taking strategies-- proof reading out loud-- it sounds right! **Instructors:** be aware that student may need more than one explanation-- just because it's logical to you --a right brained might not follow your logic-- student may need to start with the answer and go backward. Right brain students take everything you say(or don't say) personally
Verbal
words are processed on the left side of the brain--usually not much trouble expressing themselves--good vocabulary--directions verbally" turn right at Market St.-- go three blocks, turn east on Beacon St. . . “
usually think before they talk

Non-Verbal
images, perception, color, etc. are seated in the right side of the brain.
may know what they mean, but have trouble finding the right words.
will use landmarks for direction or even draw a map oddly enough--talk to think--no filter between brain and mouth again-- drawing out ideas--concept mapping-- making mental videos of everything!
when you know (or suspect you know) what a discussion question will be on a test, practice writing it ahead--allowing extra time for writing assignments. When a question is asked in class, repeat the questions to make sure you have it right and to give you time to think.
Instructors: Is everything you present visually backed up? Right brained are not auditory learners no matter how hard they try. Allow ample time to formulate an answer to a question asked in class.

Reality-Based
deal with things the way they are--effected by the environment will adjust to it
if failed 2 tests have gotten no homework--know they can’t make an A in that class
if syllabus says two absences, these students know that’s what it means

Fantasy-Oriented
will try to change the environment--tend to deal in fantasy, imagery and imagination
if have failed tests etc.--still think that they can get an A
if two absence policy, and other class policies were made for others--surely can't apply to me!

Make use of fantasy--When learning digestive system become a piece of food. Make up mnemonics that are fanciful
However, get constant feedback from instructors--pair up with someone in the class
Instructors: have a reality check in place daily--such as assignment sheet that students must keep up with showing what was turned in and points earned--or notebook check--be very clear in how grade determined--when test returned give some indication of grade to date
Right brained students are sure the rules don't apply to them.
**Temporal**

sense of time--punctual--
could pretty well tell time
without a watch

**Non-temporal**

10 minutes may as well be
“in a few days” timed test
difficult
tardy!#*

Right Brained --Set watch ahead 10 minutes.
When taking test plan how much time you will need to give each section.
Avoid class with timed tests . Practice tests before you take them,
**Instructors:** avoid giving timed test if possible. Give right brained students help in budgeting and managing time on tests. (Giving a quiz the first part of class tends to give a wake up call and adds importance to being on time.) Test often-hold students responsible for what just went on in class

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**Some Generalities About Left And Right Brain Personalities.**

**Right:** Right brained people are spontaneous. They fly by the seat of the pants. They usually have a short attention span and thrive on change. They are open-minded and flexible and extremely gullible. They are non-conformists and find it easier to get forgiveness than asking permission to do something in the first place. They are not punctual. Further they are not confrontists. They want to be liked and avoid conflict. They talk to think. There seems to be no filter between the brain and mouth. They are very creative, but have trouble following through. They use scattered thinking --random. They will do an excellent job on the major part of a job, but have trouble tying thing up. Details often get overlooked. You can tell a right-brained housekeeper by the perpetual state of laundry or the gaping hole left by open drawers or doors when they go through a room. The right-brained person wants their personal stuff with them in the office-- this often overflows into other area.

You can do as much as your left-brain counterpart (maybe more), but prefer to do it in your own unique way. With a little savoir-faire. Despite the negative bias against right-brainers as unproductive, undisciplined dreamers, you can get things done and have
fun, too. As a right-brainer, you are unique. You may also be unpredictable, impatient, sloppy and off-beat. You may loathe routines, lack follow-through, abhor structure and rules, take a wait-and-see approach more often than not, juggle several tasks at once and deal well with change, whether you want to or not. Organizing comes naturally to you, but not organizing that anybody else might recognize as such. You want to have fun, are freewheeling rather than focused, a daydreamer, your train of thought tends to wane and wander, you're oblivious to time. You learn with visual clues, are impulsive, a risk-taker. Being non-linear, you find lists a little confining, and tidiness a waste of time. You're independent, artistic, tend to ramble from topic to topic, speak with feeling, are easily distracted, lose things easily and frequently, can see the big picture but have trouble with individual steps, are indecisive, easygoing and all-too flexible. Dramatic and animated, you're a flirt, drive too fast, often speak without thinking, think well on your feet and, did I mention, you are wonderful!

**Left**: With the left brain person, organization is not an whim. They need their desk, home etc. in order. They need to know the rules. Most often sees things as either or not shades of gray. They need proof. Their decisions are based on facts, not how they feel. They are intense, serious and their communication is straight to the point with little or no elaboration. They think before they talk. They are usually dogmatic and not really concerned about popularity. They are not very sensitive to other’s feelings and seldom express their own feelings. They are planners and love detail. If you want a job done, ask a left brainer. They need sequence and will meticulously follow directions. They are consistent, focused, and conscientious. They are not risk takers. They want to know what to expect. They are usually private people. I often wonder if the left brain wasn't designed just to keep right brain in line. Because it can act like an overbearing parent at times. The voice of reason. It sets the rules (and tries to make the right side adhere to them). It is logical, neat and orderly, a built-in editor and critic. It's quite maddening, really. But we need this serious, buttoned-down side to take care of all the things the right brain simply doesn't deal with -- and among those things is time management. The left brain can be a little compulsive about it, though. It will want to do the same thing the
same way every time. It drives you toward consistency, toward timeliness, toward productiveness.
"Chop, chop!" it will say. "In a minute!" the right will say. It's up to you to keep them from fighting. People who are left-brain dominant are often good at researching and retaining information, fact gathering, math, tidiness and written instructions. They may be willing to work long hours, but consider work and play two separate things. They are responsible, good at organizing, obsessive, compulsive, dislike change, are easily overloaded, a little on the dull side, into conformity, controlling, very judgmental, and insensitive at times. Strong finishers, focused, perfectionists, detail-oriented, goal-oriented, list makers, orderly and stable, good with scheduling, punctual, welcome repetition and routine, hate interruptions, are decisive, uptight, fearful and cautious. And we need them to keep things running smoothly, to read the manuals and fix what we broke.

**Whole Brain** You should have recognized some of yourself in the descriptions of both right and left-brainers. There's a lot of overlap in function, and the balance between can vary at different times during your life. You're the balance we all try to eventually achieve.