

UNDERSTANDING LEARNING STYLES

Camelia BOARCĂȘ¹

¹PhD Lecturer, “Spiru Haret” University of Constanta

Abstract: Research shows that students learn a subject at different rates and with strikingly different levels of completeness. Teachers, as instructors, can motivate their students; making sure that they become involved in learning. All persons have preferences for ways to learn, adopting the appropriate strategies to their environment in the three main domains of learning: cognitive, affective, and psychomotor. These preferences are called an individual's learning style. Some researchers believe that when an individual is participating in a learning task, the learning is usually accomplished more rapidly and retained longer if presented in ways that the individual prefers.

Keywords: visual, auditory, tactile, linear learner, global learner, inventory, brain dominance

Learning is an active process of translating new knowledge, insights, and skills into behavior. Cawley et al. (1976) identify three domains of learning: cognitive, related to facts, theories, concepts, and problem-solving; affective, related to attitudes, feelings, values, and beliefs; and psychomotor, referring to new skills and new ways of making and doing things.

LEARNING-STYLE INVENTORIES

A person's learning style can be determined by learning-style inventories (LSIs). There are three basic types, which help to identify the following learning preferences:

- *Cognitive Inventories.* How a person perceives and classifies information: how information is ordered and sequenced; what strategies are used to solve problems; whether concrete or abstract information is handled more efficiently; whether preference is for fluid, spontaneous learning or for careful planned studies; and whether a person is primarily a visual, auditory, or tactile learner.
- *Affective Inventories.* How a person is motivated for a learning task, and how he or she remains motivated; what values, beliefs, and attitudes are related to learning; what physical conditions are preferred in the learning environment; what kinds of relationships are desired with the teacher and with the other students; and how success and failure are handled.
- *Psychomotor Inventories.* How skills are developed; what type of content (subject matter) a person likes best; how much

movement or action is needed in the learning environment; and what modes (ways) of presentation an individual prefers.

The way that a teacher handles a learning task is called that teacher's *teaching style* or *instructional style*. It is obvious that if the teacher's instructional style matches the student's learning style, there is usually a productive and fertile learning environment. However, according to Even (1992), students can be taught specific learning strategies and study skills for particular learning tasks, even though their preferred mode of learning does not match the teacher's teaching style.

That is why it is important for a teacher to be aware of the learning style preferences of the students, and of his or her own preferred way of instructing. Adjustments can be made then to accommodate the student's needs, and students can be shown how they can become more responsible for their own learning [Boylan 1984].

Two Learning-style Inventories

We have chosen two instruments to illustrate the theoretical approach of different learning styles. They are the Barsch Learning-Style Inventory and the Brain-Dominance Inventory. The Barsch evaluates to what degree an individual is a visual, auditory, or tactile learner. The Brain-Dominance Inventory scores an individual's performance by percentages of left- or right-brain dominance and relates the scores to a logical or intuitive learning-thinking style. Here are they are:

BARSCH LEARNING-STYLE INVENTORY (Jeffrey Barsch, Ed. D.)

Directions: Place a check on the appropriate line after each statement, and then refer to the scoring instructions.

Almost Some- Almost
Always Usually times Seldom Never

1. I remember more about a subject through listening than reading.
2. I follow written instructions better than oral directions.
3. I like to write down things or take notes for visual review.
4. I bear down extremely hard with pen and pencil when writing.
5. I prefer to have an oral explanation of diagram and graphs.
6. I enjoy working with tools.
7. I enjoy reading graphs, grids, charts, and diagrams.
8. I can tell if sounds match when presenting with pairs of sounds.
9. I remember best by writing things down several times.
10. I can understand and follow directions by reading maps.
11. I do better at academic subjects by listening to lectures and tapes instead of reading books.
12. I like to play with coins or keys in my pockets.
13. I learn to spell better by repeating the letters of the word out loud than by writing the word on paper.
14. I can better understand a news article by reading about it in the newspaper than by listening to the radio.
15. I like to chew a gum or eat a sandwich while studying.
16. I try to remember something by 'picturing it' in my head.
17. I learn to spell a new word by tracing the word with a finger.
18. I would rather listen to a good lecture or a speech than read about the same material.
19. I am good at working and solving jigsaw puzzles and mazes.
20. I prefer reviewing written material instead of discussing the subject matter.
21. I prefer listening to the news on the radio than reading about it in a newspaper.
22. I like to obtain information on interesting subjects by reading relevant material.
23. I feel very comfortable touching others (handshaking, etc.).
24. I follow oral directions better than written ones.

Barsch Scoring Procedures

Refer to your answer and write in the appropriate points:

Almost Always = 4 points

Usually = 3 points

Sometimes = 2 points

Seldom = 1 point

Almost Never = 0 points

Place the point value of each question on the line next

to its corresponding number. Next, add the points to

obtain your preference scores under each one of the

headings.

VISUAL		AUDITORY		TACTILE	
No.	Pts.	No.	Pts.	No.	Pts.
2.	_____	1.	_____	4.	_____
3.	_____	5.	_____	6.	_____
7.	_____	8.	_____	9.	_____
10.	_____	11.	_____	12.	_____
14.	_____	13.	_____	15.	_____
16.	_____	18.	_____	17.	_____
20.	_____	21.	_____	19.	_____
22.	_____	24.	_____	23.	_____
VPS =		APS =		TPS =	

VPS = Visual Preference Score
APS = Auditory Preference score
TPS = Tactile Preference Score

Please Note: A total score in one area should be four points or more different from a total in another area in order to be significant. Also notice the relative strength of your preferences (for example, how many 4's you had in an area).

How to use this information: This form can be used along with other diagnostic tools to help you to determine some of the ways that you are best able to learn. The Barsch tells you about learning preferences in only one area.

BRAIN-DOMINANCE INVENTORY (Author unknown)

This inventory will help to determine if you are primarily a left-brain or right-brain learner, or if you are bi-lateral (using both about equally).

Directions: Answer the questions carefully, checking the answer that is correct for you. Select the one that most closely represents your attitude or behavior. When you have finished, refer to the scoring instructions.

- | | |
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| <p>1. I prefer the kind of classes
a. where I listen to an authority.
b. in which I move around.
c. where I listen and also do things.</p> <p>2. Concerning hunches:
a. I would rather not rely on them to help me make important decisions.
b. I frequently have strong ones and follow them.
c. I occasionally have strong hunches but usually I do not place much faith in them or consciously follow them.</p> <p>3. I usually have a place for things, a way of doing things, an ability to organize information and materials.
a. Yes.
b. No.
c. In some areas of my life, but not in others.</p> <p>4. When I want to remember directions, a name, or a news item, I usually:
a. write notes.
b. visualize the information.
c. associate with previous information in several different ways.</p> <p>5. In note-taking, I print:
a. never.
b. frequently
c. sometimes.</p> <p>6. I prefer the kind of classes
a. where there is one assignment at a time, and I can complete it before beginning the next one.
b. where I work on many things at once.
c. I like both kinds about equally.</p> <p>7. When remembering things or thinking about things, I do so best with:
a. words.
b. pictures and images.
c. both equally well.</p> <p>8. In reviewing instructions, I prefer:
a. to be told how to do something.</p> | <p>b. to be shown how.
c. no real preference for demonstration over oral instruction.</p> <p>9. I prefer:
a. dogs.
b. cats.
c. no preference for dogs over cats or vice versa.</p> <p>10. I am:
a. almost never absentminded.
b. frequently absentminded.
c. occasionally absentminded.</p> <p>11. Do you instinctively feel an issue is right or correct, or do you decide on the basis of information?
a. decide on basis of information.
b. instinctively feel if it is right or correct.
c. I tend to use a combination of both.</p> <p>12. I have:
a. no or almost no mood changes.
b. frequent mood changes.
c. occasional mood changes.</p> <p>13. I am:
a. easily lost in finding directions, especially if I have never been to that place before.
b. good at finding my way, even when I have never been in that area.
c. not bad at finding directions, but not really good either.</p> <p>14. I get motion sickness in cars and boats:
a. hardly ever.
b. a lot.
c. sometimes.</p> <p>15. I generally:
a. use time to organize work and personal activities.
b. have difficulty in pacing personal activities to time limits.
c. usually am able to pace personal activities to time limits with ease.</p> <p>16. I prefer to learn:</p> |
|--|--|

- a. details and specific facts.
b. from a general overview of things, and to look at the whole picture.
c. both ways about equally.
17. I learn best from teachers who:
a. are good at explaining things with words.
b. are good at explaining things with demonstration, movement, and/or action.
18. I am good at:
a. explaining things mainly with words.
b. explaining things with hand movements and action.
c. do both.
19. I prefer to solve problems with:
a. logic.
b. my “gut feelings”.
c. both logic and “gut feelings”.
20. I prefer:
a. simple problems and solving one thing at a time.
b. more complicated problems, more than one thing.
c. both kinds of problems.
21. Daydreaming is:
a. a waste of time.
b. a usable tool for planning my future.
c. amusing and relaxing.
22. I prefer classes in which I am expected:
a. to learn things I can use in the future.
b. to learn things I can use right away.
c. I like both kinds of classes equally.
23. I am:
a. not very conscious at body language, I prefer to listen to what people say.
b. good at interpreting body language.
c. good at understanding what people say and also in interpreting body language.
24. In school, I preferred:
a. algebra.
b. geometry.
c. I had no real preference of one over the other.
25. In preparing myself for a new or difficult task, Such as assembling a bicycle, I would most likely:
a. lay out all the parts, count them, gather the necessary tools, and follow the directions.
b. glance at the diagram and begin with whatever tools were there, sensing how parts fit.
c. recall past experiences I similar situations.
26. In communicating with others, I am more comfortable being the:
a. talker.
b. listener.
c. I'm usually equally comfortable with both.
27. I can tell fairly accurately how much time has passed without looking at a clock.
a. Yes.
b. No.
c. Sometimes.
28. I like my classes or work to be:
a. planned so that I know exactly what to do.
b. open with opportunities for change as I go along.
c. both planned and open to change.
29. I prefer:
a. multiple-choice tests.
b. essay tests.
c. I like both kinds of tests equally.
30. In reading, I prefer:
a. taking ideas and thinking about them separately.
b. putting a lot of ideas together before applying them to my life.
c. both equally.
31. When I read, I prefer to look for:
a. specific details and facts.
b. main ideas.
c. both about equally.
32. I enjoy:
- a. talking and writing.
b. drawing and handling things.
c. doing both equally.
33. It is more exciting to:
a. improve something.
b. invent something.
c. both are exciting to me.
34. I am skilled in:
a. putting ideas in a logical order.
b. showing relationships among ideas.
c. both equally.
35. I am good at:
a. recalling verbal material (names, dates).
b. recalling visual material (diagrams, maps).
c. equally good at both.
36. I remember faces easily:
a. No.
b. Yes.
c. Sometimes.
37. When reading or studying, I:
a. prefer total quiet.
b. prefer music.
c. listen to background music only when reading for enjoyment, not while studying.
38. I like to learn a movement in sports or a dance step better by:
a. hearing a verbal explanation and repeating.
b. watching and then trying to do it.
c. watching and then imitating and talking about it.
39. Sit in a relaxed position and clasp your hands comfortably in your lap. Which thumb is on top?
a. Left.
b. Right.
c. They are parallel.

Brain-Dominance Inventory Scoring

Number of A's _____ Number of B's _____ Number of C's _____

Your A's, B's and C's **must total 39**, or your score is incorrect.

1. Compute your B score minus your A score. It can be a minus or plus answer. _____

2. If your C score is 17 or higher, divide your B minus A score by three. Round your score to the nearest number. The answer will be your score. It can be a minus or plus number _____

OR If your C score is from 10 to 16, divide your B minus A score by two. Round your score to the nearest number. The answer will be your score. It can be a minus or plus number _____

OR If your C score is less than 10, do not divide it at all. Your B minus A score is your answer _____

3. NOW PLOT YOUR SCORE BELOW

-11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +20 +11

A score of 0 = Whole-brain dominance (bi-lateral)

A score of -1 to -3 = Slight preference toward the left

A score of -4 to -6 = Moderate preference for the left

A score of -7 to -9 = Left-brain dominant

A score of -10 to -11 = Left-brain dominant (very strong)

A score of +1 to +3 = Slight preference toward the right

A score of +4 to +6 = Moderate preference for the right

A score of +7 to +9 = Right-brain dominant

A score of +10 to +11 = Right-brain dominant (very strong)

SUGGESTIONS FOR TEACHERS

For each of the inventories listed above, we will examine what the teachers can do and how they can use them to find out their students' leaning-styles.

The Barsch Learning-Style Inventory

Visual learners are those who learn primarily with their eyes. It is important for the teacher to use resources that must be read or seen: the board, posters, bulletin boards; books, magazines, and textbooks; drawings, pictures, graphs, and diagrams; films, videos, transparencies, and computer monitors. Visual learners prefer to have written assignments, so it is a good idea for the teacher to provide written evaluations.

Auditory learners learn primarily with their ears. The teacher should therefore provide many resources for hearing: lectures, discussions, and small group talks are good, and so are records, CDs, tapes, and videotapes, using stereo, radio, Internet, and television. The teacher should also give precise oral directions and explanations. This includes orally setting tasks, giving assignments, discussing resources, reviewing progress, and any other activity requiring aural comprehension and processing.

Tactile learners are those who prefer to learn “hands-on”. For these students, teachers should have manipulative and three-dimensional materials that are touchable and moveable. They should make use of models and other real objects. Students should be allowed to plan, demonstrate, report, and evaluate by using these types of resources and the teacher should encourage written, graphic, and/or computer records of information.

The Brain-Dominance Inventory

Every healthy individual uses some combination of both left- and right-brain behavior, but most people show a preference for one or the other. There is no intellectual prestige or stigma associated with either preference; however, they are different and they have different functions.

The left-brain learner is often called *linear* (likes to process information line-by-line, or in a sequence), or *analytical* (likes to look logically at details and facts). The right-brain learner is called a *global* learner because that person sees the big picture (the overall view), and process information as a whole, or globally.

The left-brain learner is usually more logical, organized, and disciplined. This person wants a “plan”, likes to look at details, and makes decisions by facts. The right-brain learner likes things to be informal and spontaneous, is usually creative, and tends to make decisions based on intuition and feelings.

Persons with the left-brain preference usually find theoretical details important and immediately interesting, while

those who prefer the right-brain functions find theory interesting only after the “how to do” is mastered. Left-brain learners can apply new information quickly, and usually prefer to work alone. Right-brain learners need longer to assimilate material and often prefer to work with others. Individuals with left-brain preference tend to be more time-oriented and competitive, while those with right-brain preference are usually more event-oriented and generally less competitive. Studies and researches give a number of tips to teachers for facilitating learning, based on hemisphericity. Here are some of them:

For those students with a left-brain preference, teachers can emphasize the discovery approach, and students can be encouraged to find ways of solving problems. New concepts and procedures can be taught by logical explanation and analytical exploration. Graphs, charts, and tables assist the learning process. The class atmosphere can be businesslike, quite formal, and the room can be functional, work-oriented, and uncluttered. The teacher has a more formal relationship with students, and is more of an authority figure. Recognition of achievements emphasizes that the students have excelled at the task.

If students have a right-brain preference, the teacher should clearly state all concepts, principles, and procedures early in the lesson, making them obvious. The role of the teacher is that of guide; problem-solving should be modeled, with verbalization of the steps. Complex graphs and charts hinder, and if simple ones are used, they should be made in class, with an explanation. The class atmosphere should be relaxed and friendly, without tension or pressure; the room should be comfortable and attractive. The teacher should make a consistent effort to strengthen personal relationships with students, and recognition of achievement should include the teacher expressing personal pleasure.

Romanian students are more accustomed to a formal classroom atmosphere – the teacher is definitely an authority figure and personal relationships with students are not too close and not so frequent either. But Romanian teachers can change this too formal, traditional teaching environment, and they can make their classrooms more attractive, by using pictures and charts. Teachers may attempt to use discovery and problem-solving, but also much modeling and demonstration would be necessary to make students comfortable with these techniques. Since we intend to use these methods in language classes, the teachers should consider including dialogues, role-plays, simulations, and other specific activities requiring both participation and communication. With considerable efforts and dedication, and in time, these could become popular modes of instruction in our schools and universities.

“Mircea cel Batran” Naval Academy Scientific Bulletin, Volume XIV – 2011 – Issue 2
Published by “Mircea cel Batran” Naval Academy Press, Constanta, Romania

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