



A COMPARATIVE STUDY ON RIGHT AND LEFT BRAIN DOMINANCE IN LANGUAGE LEARNING

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Abstract

The brain consists of two interconnecting hemispheres. The idea of 'right brain' and 'left brain' thinking was developed in the late 1960s by an American psycho biologist Roger W Sperry. The human brain has two very different ways of thinking. One (the right brain) is visual and processes information in an intuitive and simultaneous way, looking first at the whole picture then the details. The other (the left brain) is verbal and processes information in an analytical and sequential way, looking first at the pieces then putting them together to get the whole. Even though things are not as simple as Sperry thought they were his ideas can help us improve the way we think and learn. Once you understand your own natural preference you can develop the side of the brain that you do not naturally use in order to improve your thinking skills. An awareness of your natural preferences, cultural influences and the advantages and disadvantages involved can help you understand how you 'tick' - and that can help with your studies (class work, note taking, planning, revision, exam technique etc). These articles focus on a comparative study on right and left brain dominance in language learning.

Key Words: Learning Style, Brain Dominance, Left Brain Versus Right Brain, Hemispheric Dominance.

Introduction

It is assumed that learning involves a lot of complex components such as environmental, emotional, sociological, physiological, psychological ones (Dunn, 1983). During different stages of learning process, differences are observed between individuals and these are referred as individual differences in education. The brain dominance and learning style preferences of individuals are also regarded among individual differences. Knowing how learning takes place; and mental activities that are performed to reflect this on learning environment during learning process are important for brain hemisphere preferences and learning styles. For this reason, studies about brain hemispheres and learning styles continue to draw interest both in past and today.

The studies about split brain show that different types of information are processed in left and right brain hemispheres and the functions of these two hemispheres are different (Solso, Maclin & Maclin, 2007: 80). According to studies, left hemisphere exhibits a more analytic approach, while right hemisphere displays holistic and spatial approach. Each hemisphere have special mental abilities. The left hemisphere is analytical, abstract, verbal, digital, logical, sequential, and rational, while the right hemisphere is holistic, concrete, non-verbal, visual spatial, intuitive, simultaneous and analogical (McCarthy, Germain & Lippitt, 2006). Both hemispheres are in interaction with each other under normal circumstances. However, each has different basic functions.

Literature Review

Brain functions and the effect of them in learning English have always been one of the researcher's favorite spheres of interest. Being an English teacher, she was intrigued when she first heard about a connection between brain dominance and learning English in one of Gulferm Aslan's (1999) seminars she attended. With her and her colleague's 5th grade students in mind, she became curious as to the effects of right or left brain dominance could have on the students' academic achievement in learning English.

Much of the theory of left and right specialization has been developed through examining some patients. The brains of these patients were damaged because of some accidents. The ones who had a damage on the left hemisphere showed that the processing of language reside in the left hemisphere.

Morris (2005) stated that Dr. Roger W. Sperry, a Nobel prize winner, conducted a research to see what happens when the parts which connects left and right hemisphere is cut. Morris (2005) found the following: "A typical result of this research involved presenting an image to the left eye [connected to right hand side of the brain], the patient would be unable to say the name of the object [using language centres in the left hemisphere], but could pick out a similar object with the left hand [right hemisphere]."

Perhaps the most intriguing split brain research was with a patient of another pair of split brain researcher, Michael Gazzaniga and Joseph LeDoux, who had some limited language facilities in his right brain. This patient showed marked



preferences in responses from the two hemispheres. When asked, 'What do you want to do?' the left hemisphere replied 'draftsman', but the right hemisphere [using scrabble letters] replied 'automobile race'.

Discussions about brain hemispheres reveal the fact that there are differences between individual learning styles (Caine & Caine, 2002: 37). Different models, approaches and inventories have been developed depending as a result of findings of brain studies. For example, McCarthy identified the 4MAT learning model by taking the brain hemispheres into account (McCarthy, Germain & Lippitt, 2006). In the conducted studies, it is sometimes seen that the concepts of learning style, cognitive style and modes of thinking are used interchangeably.

The Left Hemisphere of the Brain

The left hemisphere processes information by organizing it sequentially and is described as analytical. This is because it specializes in recognizing the parts or building blocks of a system.

Your Left Brain

- Interprets Words
- Does Analysis
- Likes Details
- Makes Plans
- Follows Rules

The Right Hemisphere of the Brain

The right hemisphere specializes in combining the parts to produce a whole. Unlike the left, the right hemisphere organizes simultaneously. It specializes in a method that perceives and constructs patterns.

Your Right Brain

- Processes Pictures
- Uses Intuition
- Prefers the 'Big Picture'
- Operates on Impulse
- Uses Imagination



While each side of the brain has preferences, both sides are involved in every thought process to varying degrees. The key point is that the majority of us have a dominant brain side. Yet to fully understand a concept or learn a new process, information must make sense to both sides of the brain. Merely appealing to one side or the other results in incomplete comprehension and miscommunication.

For example, although it is most efficient at processing verbal information, language should not be considered as being 'in' the left hemisphere. This hemisphere is able to recognize that one stimulus comes before another (sequential) and therefore the left brain can recognize the word - its meaning and grammatical significance. But verbal perception and generation comes from the right side of the brain. This depends on the awareness of the sequence in which sounds occur - but produces an overall sense of meaning. It may well be that a left brain language student can learn vocabulary and grammar really thoroughly and therefore does well in an exam but is unable to understand a native speaker because there are too many 'gaps' in the word knowledge to grasp the overall meaning - whereas a right brain dominant speaker can pick up on the general meaning without the full knowledge of vocabulary ... a really good linguist can do both!



Hemispheric Dominance

Neuropsychologist Roger W. Sperry developed the right brain - left brain theory in 1960. He believed that the human brain is right or left side dominant and that each side of the brain controls different types of thinking. Some individuals utilize both sides of their brains equally (all use both to some degree) but most people have a greater tendency to think in a certain way.

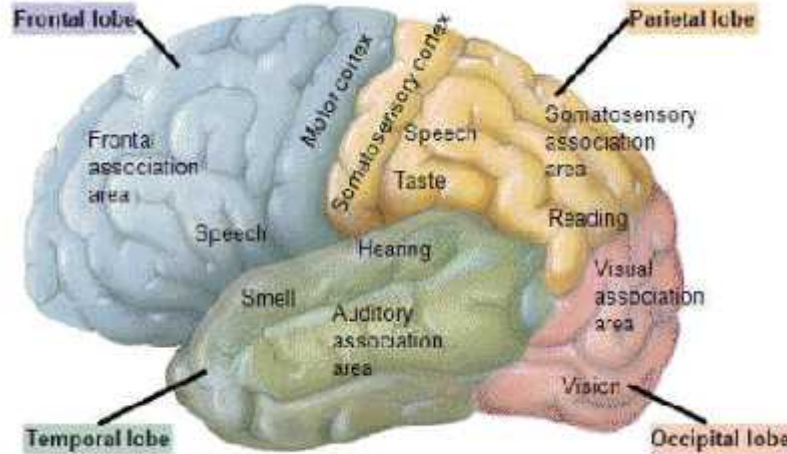


Figure 1: The human cerebral cortex. Each side of the cerebral cortex is divided into four lobes, and each lobe has specialized functions. Some of the association areas on the left side (shown here) have different functions than those on the right side. For further information on the four lobes displayed, click on the lobe of interest.

Left Brain Versus Right Brain

The majority of people are left brain dominant. Although the typical school environment in modern times tends to favor left brain thinkers with expectations of logical thought and practical action, right brain thinkers who tend to be more imaginative and "outside the box" are equally valuable. Interestingly, right brain dominant people are often left-handed (since each hemisphere controls the opposite side's hand) which coincides with right brain dominant people being less common (as left-handed people are less common).



Figure 2: Left-brain, right-brain conflict. Look at the colored words above; try to say the color - not the word. The right side of the brain (creativity) tries to say the color while the left side (verbal) tries to say the word.

The Brain and Thought Processes

This section of the site is designed to make you think about how you think. You need to get to know 'The Brain'. How you think affects how you best take in information and process that information in order to learn it. Knowing a bit more about how you think can help you get better grades. Understanding how other people think help you to understand where your teacher or lecturer is coming from - so, hopefully rather than just dismissing a teacher as 'useless' you can encourage them to provide the information in a way you can better relate to. There is no 'best' personality trait. But some of them make particular types of learning easier. Your personality is not fixed - you can develop sides of it that you do not naturally strongly possess, your personality also reacts to personal circumstances - depression has an effect on it.



Use both sides of your Brain

Medical science says that the left side of brain deals with logic, language, numbers and sequence, while the right side is connected with visualization, color, imagination, color and awareness. However, both hemispheres of the brain can undertake all kinds of activities. You should never say that you do not have the capacity to imagine or that you are weak in certain. In fact, the logical answer is that particular subject. All you have to do improve your memory is to use both sides of the brain.

As you get older, you lose your imagination skills. In other words, you use less of your right-brain hemisphere. Take the case of children studying in lower classes. They cram classroom wall with colored drawings. They have boxes full of colored pencils, paints and plasticine. When they reach higher classes, they are all the move, from one room to another and visual stimulation is more often than not absent. Most of them stop learning in the new environment. The lesson to be learnt here is if we want a powerful memory, we have to develop our imagination and visualization.

Conclusion

People think and learn in different ways. In any group there will always be evidence of different learning characteristics, but not only individual preferences have an effect on how you think different cultural groups may emphasize one cognitive style. Both sides of the brain can reason, but by different strategies, and one side may be dominant. In fact most the value of the right-brain ones is sometimes under-valued and those who naturally have predominantly a right-brain way of thinking find learning 'logical subjects' like science and maths difficult because they have to cultivate a way of thinking that is not natural to them. They can do it but it takes a lot of effort at first. This can put some people off the 'logical' subjects and make them think they can only do creative ones. Those with left-brain preference often are never encouraged to develop their right-brain enough and that can be a problem. Gifted and talented people need to develop both modes of thinking.... that is the way to excel!

References

1. Aslan, G. (1999). *Drama Techniques Seminar*. Stanbul: The British Council..
2. Education World (2000). *Left Brain vs. Right Brain -- Which Side Are You On?*.
3. Freed, J., & Parsons, L. (1997). *The Left – Right Continuum for Teens and Adults. Right Brained Children in a Left-Brained World*. New York,
4. Gabriel, G. (2007). *Left Brain - Right Brain: The Min Two*. Scientific Learning. 5.
5. Kemal Ozgena, Berna Tatarogua & Huseyin Alkana (2011). An examination of brain dominance and learning styles of pre-service mathematics teachers, *Procedia Social and Behavioral Sciences* 15 (2011) 743–750.
6. Kemal Ozgena, Berna Tatarogua & Huseyin Alkana (2011). An examination of brain dominance and learning styles of pre-service mathematics teachers, *Procedia Social and Behavioral Sciences* 15 (2011) 743–750.
7. McCarthy, B. (1987). *Hemispheric Mode Indicator (HMI)*. Barrington: Excel Inc.
8. Merve Oflaz (2011). The effect of right and left brain dominance in language learning, *Procedia Social and Behavioral Sciences* 15 (2011) 1507–1513.
9. Morris, M. (2006). *The SPD Companion. Right Brain vs. Left Brain Learning Styles*.
10. Morris, R. (2005). *Left Brain, Right Brain, Whole Brain? An examination in the theory of brain lateralization, learning styles and the implications for education. Geometry and Imagination*. 17 – 30.
11. NY: Simon & Schuster.
12. Revell, J. (1992). *Left, Right and VAK, Practical English Teaching*.
13. Squadron leader Jayasimha's, Managing Director to vision learning innovations (p) Ltd., Bangalore, *Train your brain*, Neelkamal publications Pvt. Ltd.,