

The Preferred Learning Styles of Learners to use their Hemispheric Dominance (left & right brain dominance) for Learning a Second Language; A Case Study of Iranian EFL Students in Yazd

Malek Ahmad Kord, Assistant Professor, Resalat University Zahedan (Sistan & Baluchestan) Branch, Iran

Zahra Mohammadi Dehaj*, B.A. student, Resalat University, Zahedan (Sistan&Baluchestan) Branch, Iran

Najmeh Arab Goorchooyi, B.A. student, Resalat University,Zahedan (Sistan&Baluchestan) Branch, Iran

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Abstract

The problem of language acquisition has been given plenty of interest in current years. An essential factor to have a look at in teaching overseas languages is the idea of hemispheric dominance. The brain assigns certain features and systems to special hemispheres of it. The features of the left brain are described through series and order in contrast with the features of the right brain, which has the characteristic functions of being holistic. In order to learn a second language, learners may usually use one of their brain hemispheres more than the other one and in this path they have different learning styles that they mostly prefer to use. The left brain dominance is commonly associated with educational achievement and intelligence, whilst right brain dominance is associated with creativity. In this study, two kinds of questionnaires were used. One of them consisted of 5 questions that determine the students' brain dominance and their personal traits, and the other was consisted of 10 questions that determine the preferred learning styles of the learners. 40 EFL students (female) from two high schools in Yazd participated in this study. The data were evaluated by the use of SPSS package version 16. The obtained results revealed a significant relationship between learners' hemispheric dominance and their preferred learning styles.

Keywords: Learning Styles, Hemispheres, Brain, Second Language

1. Introduction

There are numerous traces of studies within side the area of language mastering/teaching and the mechanism of brain. The problem of language acquisition has been given plenty of interest in current years. Some investigators have argued for the biological nature of language, even as a few researchers have claimed that language acquisition is a final

results of cultural transmission and socialization process. An essential factor to have a look at in teaching overseas languages is the idea of hemispheric dominance. "Control over the body's capabilities and sensation is split among the 2 hemispheres evenly(Mazaheri et al., 2019).

Steinberg (1993) mentioned that brain assigns certain features and systems to special hemispheres of it. The features of the left brain are described through series and order in contrast with the features of the right brain, which has the characteristic functions of being holistic. Tendero (2000) mentions that left brain dominance is commonly associated with educational achievement and intelligence, whilst right brain dominance is associated with creativity(Weisi & Khaksar, 2015).

Lateralized brain areas direct capabilities including language and visuospatial processing. In most right-handed people, being attentive to stimuli involving language elicits brain activity lateralized to the left hemisphere, while being attentive to stimuli involving visuospatial processing elicits brain activity lateralized to the right hemisphere. Atypical lateralization in brain shape and characteristic is related to neuropsychiatric issues including autism spectrum issues and schizophrenia, despite the fact that there's great variation within generally growing people in the power to which precise capabilities including language are lateralized to the canonical side, in particular for left-handed and ambidextrous people(Nielsen et al., 2013).

1.1.Learning Styles

A learning style isn't always in itself an ability but instead a favored manner of using one's abilities. Individuals have unique learning styles, that is, they vary in their 'natural, habitual, and favored manner(s) of absorbing, processing, and maintaining new data and skills'. Learning styles are commonly bipolar entities (for instance reflective versus impulsive, random versus sequential), representing two extremes of a huge continuum; however, in which a learner falls on the continuum is value neutral due to the fact that every extreme has its own potential benefits and disadvantages. Moreover, even though people may have some strong style preferences and tendencies, learning styles aren't constant modes behavior, and, based on distinct conditions and tasks, styles may be extended and modified. However, the extent to which people can expand or shift their styles to fit a specific situation varies (Pashler et al., 2008).

1.2.Hemispheres

Hemispheres in halves are located within side the cerebral cortex and there's a tissue with the call of the corpus callosum which connects them together. Hemispheres are composed of 4 components of frontal, parietal, temporal and occipital lobes. Different capabilities of the brain are associated with distinct lobes. For example, cognitive capabilities are processed within side the frontal lobe, bodily motion processing within side the parietal lobe, hearing within side the temporal lobe and occipital lobe is answerable for imaginative and prescient processes. Language systems and features also are involved in a number of the regions of hemispheres. Phenomenon wherein one of the hemispheres have become the dominant one is referred to as hemispheric dominance (Weisi & Khaksar, 2015).

The maximum apparent signal that our brains feature asymmetrically is the near-frequent choice for the right hand, which goes back at the least as far as the historic report takes us, and has lengthy been an effective supply of symbolism, with the dexterous right related to advantageous values and the sinister left with poor ones. This has frequently caused stigmatization of left-handed individuals, occasionally forcing them to exchange hand use, sometimes with grievous consequences. Superstitions approximately left and right were compounded through the discovery, within side the 1860s, that speech was based predominantly within side the left hemisphere of the brain. Since language itself is uniquely human, this strengthened the concept that brain asymmetry more commonly is a distinct mark of being human. Because the left hemisphere additionally controls the dominant right hand, it got here to be extensively appeared as the dominant or primary hemisphere, and the right as non-dominant or minor. Nevertheless, similarly proof that the right hemisphere was the more specialised for notion and emotion additionally caused speculation, a number of it far-fetched, approximately the complementary roles of the 2 facets of the brain in preserving psychological equilibrium (Corballis, 2014).

Many instructors have problems with a few kids including keeping them still and focused, completing assignments, keeping organized, grasping concepts the way they're taught. In 2006, Morris defined the reasons particularly associated with the dominant side of the brain. He additionally added that left brained kids have analytical thinking. They make lists and schedules. They usually want to realize the regulations and follow them. They take in facts via analysis, observation and thinking. They have little problem expressing themselves in phrases. They are unique in selecting via their very own personal stories and backgrounds. Right brained kids know precisely what they mean but have problem finding the words to express. They are visual learners who can see a 3 dimensional picture in their minds. They like things to be concrete so they prefer to see, feel or touch the real object. There also are whole brained kids who use a number of the above strategies for learning. The right brained ones might also have left brained tendencies or vice versa(Thaha & Mohammed, 2020).

Research has shown that right-brain learners are more intuitive and spontaneous people. When it comes to the right side of the brain _it thinks in pics not words. ‘ Visual-spatial skills of location and direction (maps), reorganizing colours and shapes and imagining and arranging them into art (sculpture, painting, architecture, music, rhythm, and dance) are capabilities of the right brain.’ The right-brained tend to look at the large image beforehand rather than all of the details and facts. A left-brained is driven through logic and prefers following steps or a particular system to perform a task. Details and facts are usually essential to the left brain. It decodes and procedures data. ‘It works step-by-step; sees things in parts; puts things in order; recalls people’s names; comes up with logical solutions to problems. ‘Middle-brained learners use each side of the brain therefore making them bendier in terms of mastering new things. Many research were conducted that validate these notions (Thaha & Mohammed, 2020).

1.3.Brain

Brain is the maximum complex part of the body. According to Steinberg (1993), brain is located below the cranium and composed of virtually 10 billion neurons and billions of fibers that join the neurons. Brain includes 4 predominant components: the medulla oblongata, the pons Varolli, the cerebellum and the cerebral cortex from the front to the back of it(Weisi & Khaksar, 2015).

1.4.Second Language

Language is a way of communication. It is a way of conveying our thoughts, ideas, feelings, and emotions to other people. Jack C. Richards and Richard Schmidt outline the language: “the system of human verbal exchange which includes the structured arrangement of sounds (or their written representation) into large units, e.g. morphemes, words, sentences, utterances. In common usage it is able to additionally consult with non-human structures of communication including the “language” of bees, the “language” of dolphins.

To outline language isn't an easy task. Different linguists attempted to define language variously. However, if we analyze the definitions closely, we are able to discover that each of those definitions is incomplete in some respect or the other. These definitions will increase a huge number of questions.

Some of the most typically accepted definitions of language given by the specialists in the area of linguistics are given below:

Edward Sapir says: “Language is a simply human and non-instinctive method of communicating thoughts emotions and desires via voluntarily produced symbols”

This definition is rather incomplete because ‘thoughts, feelings and desires’ aren't the only things communicated by means of language. The term language covers a huge variety of implication including body language, sign language and animal language.

According to Hall, language is “the institution whereby human beings communicate and have interaction with each other by means of habitually used oral-auditory arbitrary symbols.”

Hall’s definition is narrow because it regards language simply as a human institution.

We know that animals do communicate. Animals have their very own language .In the words of Noam Chomsky, language is “a set of (finite or infinite) sentences, each finite in length and constructed out of a finite set of elements.”

Chomsky focuses on the structural capabilities of language. He showed how language may be investigated through studying it into its constituent elements.

Each of those linguists focuses on certain factors of language and ignores a few others. However what they've stated of language is true, though not comprehensive.

As an item of linguistic study, "language" has primary meanings:

An abstract concept, and a particular linguistic system, e.g. "French". The Swiss linguist Ferdinand de Saussure, who described the modern discipline of linguistics, first explicitly formulated the difference using the French word *langage* for language as a concept, *langue*(competence by Chomsky) as a particular example of a language system, and *parole* (Chomsky’s performance) for the concrete usage of speech in a specific language(YULE, 1982).

2.Statement of the problem

The reason of this study is to determine the effects of right and left brain dominance on students' educational success and mastering English. Students may use their left or right hemisphere more than the other one and by means of this, they may also prefer different learning styles. Therefore, having an idea about the brain dominance of the scholars is important. If the instructor is aware of his or her students well, he or she will be able to use the strategies, techniques and substances adequately(Oflaz, 2011).

Language classrooms include students who have unique learning patterns and those learning patterns are associated with the dominance of right or left brain. This has a remarkable effect throughout the learning process (Thaha & Mohammed, 2020).

This study looks at the potential abilities of left and right-brain in order to recognize those learning styles that students prefer to follow.

3.Research Question

The following studies question is characterized by a focal point consistent with the above information;

Which part of the brain is the most preferred one for the language learners?

4.Research Hypothesis

Brain dominance has a vital effect on learning a second language.

5.Research Methodology

5.1.Participants

40 EFL students (female) were recruited for this research from two high schools in Yazd that were chosen based on random sampling. A special attempt was made to find students who were on the same educational level. In order to fulfil this research, 40 participants were given two questioners to identify students who use mostly either their left or right-brain hemispheres to acquire a second language and their preferred learning styles(Kord, n.d.).

5.2.Instrument

In this study, two questioners were chosen as instrument for data collection. The questioners are prepared to analyze if the students are a left-brained or right-brained learner and also to measure how much they use either of their hemispheres what their preferred style is.

6. Procedure

6.1.Data collection

In the present study, all records have been gathered over the last three weeks of the academic year in spring semester. After preparing the wanted copies of questionnaires, researcher visited college students with inside the classroom and dispensed questionnaires to volunteer contributors. Students had been reminded that there are no proper or incorrect answer within side the questionnaires given to them, and that their responses might not have an effect on their exam results so that they had been requested to reply to the items of questionnaires frankly. Persian college students had been dispensed Persian model of the instruments to prevent misinterpretations of the inventory items(Özyel, 2016).

Participants were explained that strategy inventory was to apprehend what strategies they use to study a new language, and brain dominance inventory was to discover which side of their brain they have been much more likely to use. The contributors had been assured of confidentiality of all their information (Özyel, 2016).

The records became gathered approximately in a class hour. Participants have been able to finish the questionnaires in about 50 minutes (Özyel, 2016).

6.2.Data analysis

From the data gathered and analyzed, it is obvious that most of the students have right brain dominance.

The findings are as follows:

- Most of the learners are very creative by nature.
- Majority of the students are typically emotional.
- Most of the students want to be unique from others.
- Most of the students can manage situations easily
- Most of the students enjoy the arts (music, art, extracurricular activities)
- Most of the students are divergent thinkers.
- From the data gathered it's also obvious that:
- Very few students are rational in their approach.
- Very few students choose reasoning and analytical tasks.
- Very few students typically prefer simply theoretical courses
- Few students are methodical and organized

(Thaha & Mohammed, 2020)

7. Results

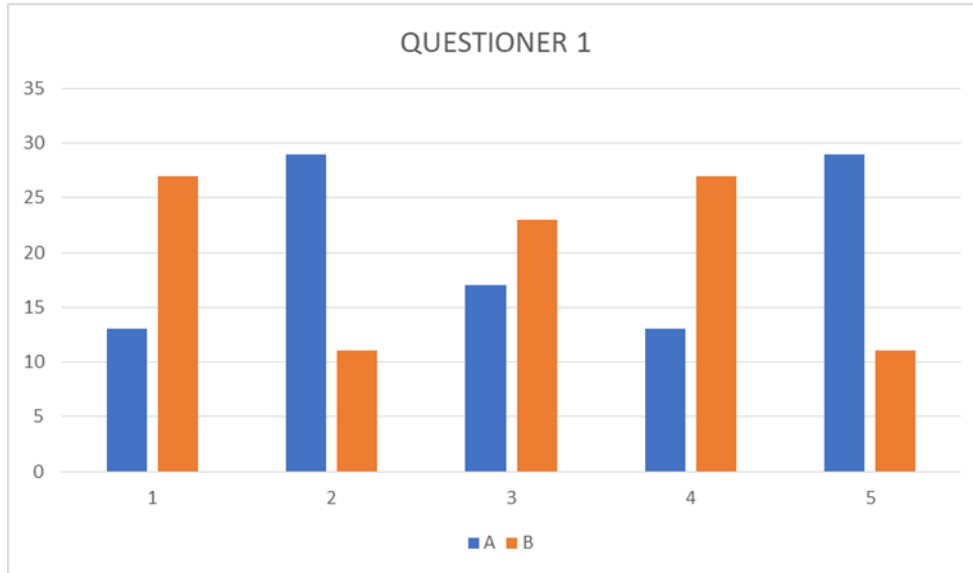
The data of the study were collected through a questionnaire comprising of 15 questions, which were divided into two segments, namely: Personal traits and learning styles. The questionnaire was administrated to 40 students from two high schools.

Right/Left Brain Dominance Tests

		A	B
1	A. At home, my room has organized drawer and closets. I even try to organize other things around the house. B. I ignore and overlook things which are not related tome.	32.5%	67.5%
2	A. I enjoy a movie only when I watch it right from the beginning. B. I can watch a movie from any point. I can quickly guess thestory.	70%	30%
3	A. I decide what to wear, a day inadvance. B. I pick up a dress without muchplanning.	42.5%	57.5%
4	A. I keep a track of myexpenditure. B. I like to spend money as long as it makes me feelhappy.	32.5%	67.5%
5	A. While buying a thing I give importance to its purpose morethan itsappearance. B. I buy things which look beautiful andcolorful.	72.5%	27.5%

Questioner 1 (Personal traits)

(Thaha & Mohammed, 2020)



Reliability questioner 1;

Reliability Statistics

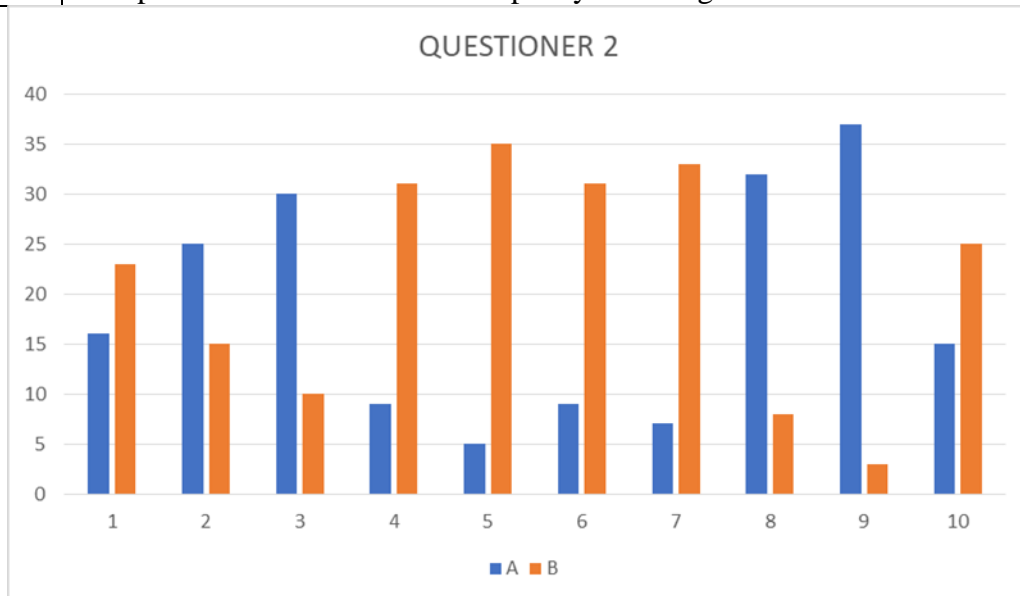
Cronbach's Alpha	N of Items
.881	5

Check the Cronbach's Alpha value shown in the Reliability Statistics table. In this example the value is .881, suggesting very good internal consistency reliability for the scale with this sample. Values above .7 are considered acceptable; however, values above .8 are preferable.

Questioner 2 (Preferred Learning Style of the learner)

		A	B
1.	A. I like to improve my vocabulary by reading newspaper and magazines and books. B. I like to improve my vocabulary by reading the subtitles while Watching movies.	22.5%	77.5%
2.	A. I prefer to list out the important points and highlight them. B. I prefer to read and understand the gist.	62.5%	37.5%
3.	A. While reading a comprehension passage, I take clues from the keywords. B. While reading the passage I try to form an image about what is being said.	75%	25%
4.	A. I prefer to have a mind map before I begin to write. B. I prefer to write as the ideas keep coming to my mind.	25%	75%

5.	A. I prefer to read informative books on health, discoveries geography, inspiring personalities, etc. B. I prefer to read fictions, books on travelling, cuisines, cultures.	12.5%	87.5%
6.	A. I prefer to learn individually in order to avoid disturbance. B. I prefer to work in a group as interaction makes learning easier and interesting.	22.5%	77.5%
7.	A. I prefer writing assignments after referring to a good number of books. B. I prefer to make models and give presentations.	17.5%	82.5%
8.	A. I prefer to memorize the important points in order to reproduce. B. I prefer to understand the examples to reproduce.	80%	20%
9.	A. I prefer to learn in a quiet place. B. Sometimes I listen to music before or while studying.	92.5%	7.5%
10.	A. I prefer to learn difficult concepts by gathering more information. B. I prefer to learn difficult concepts by watching videos.	37.5%	62.5%



Reliability questioner 2;

Reliability Statistics

Cronbach's Alpha	N of Items
.776	10

Check the Cronbach's Alpha value shown in the Reliability Statistics table. In this example the value is .776, suggesting very good internal consistency reliability for the scale with this sample. Values above .7 are considered acceptable; however, values above .8 are preferable.

1. Discussion

Many researchers stated that learner, who are left-dominant can promote higher-order thinking and problem-solving skills in college students. This study was designed to analyze the results of two instructional strategies for developing vocabulary which includes word parts, and

context clues on autonomous on left-dominant and right-dominant students' performance studying English in English language institutes at intermediate level(Savadkouhi, 2013).

The findings discovered that experimental group made progress over time, that is, the students from this group attained an increase in rankings from pre-test to post-test. Further, there has been a great distinction among left-dominant and right-dominant learners in post test in experimental group. The results of this study raise more questions and point out the need for the implementation of hemispheric dominance in relation to vocabulary achievement. Right-brained students who were good at responding demonstrating instructions and visuals showed a good performance in the Vocabulary part. As being open to open ended questions they were also good at the writing part. Left brained students, who were good at problem solving by logic and who can see the differences, did well in the Use of English and Reading parts. Whole brained students' exam results seemed to be balanced because they could use both sides of their brains almost equally. All the results of this study indicate that the brain dominance effects the achievement of the students within side the English classroom. Taking a lot of these into consideration teachers can find the efficient strategies for their own classrooms. Therefore, teachers also can discover what type of activities the students want to enhance the part of their brain other than the dominant one(Savadkouhi, 2013).

Being aware about own brain dominance enables the teacher not to teach only via his / her own dominance. By finding out the brain dominance of the students and giving activities according to them, the teacher may also enhance the performance of his or her own teaching, increase the fulfilment rate and additionally advise the students on learning strategies and recalling. All these information can serve teachers to make sure that they appeal to all learners with different brain dominances and offer their learners experiences with all 3 modalities. They should discover a way to mix all 3 to make their learners enhance, to create the right atmosphere to make learning easier and extra fun and to help students to boost their information with significant activities. To conclude, it isn't the teachers' duty to teach all vocabulary to the learners(Savadkouhi, 2013).

Learners should depend upon themselves by adopting techniques that fit their capabilities in mastering vocabulary. Vocabulary learning isn't always easy. But with practice and time, learners should discover that they're making progress. Learners ought to study items that appear in lots of contexts. Learning in rich contexts is valuable for vocabulary learning. Vocabulary words should be those that the learner will find beneficial in lots of contexts. When vocabulary items are derived from content learning materials, the learner can be better equipped to deal with specific reading matter in content areas. Learners will sense that vocabulary learning is powerful when it entails active engagement in learning tasks(Savadkouhi, 2013).

As a conclusion, it may be stated that investigating hemispheric dominance and learning styles from the elements of curriculum, teaching process and instructors will contribute considerably to the Iranian Education (Savadkouhi, 2013).

Recommendations for further studies

1. Students can be made to behavior brief surveys and examine data.
2. Students might be requested to put together fashions and charts.

3. Teachers ought to offer hyperlinks of beneficial movies and include as a minimum one video all through the lecture.
4. Teachers may want to comprise songs to complement vocabulary and enhance the visible skills.
5. Teachers should give an explanation for principles thru position performs and props.
6. Teachers should take the scholars on discipline visits to offer them firsthand experience.
7. Assigning Library hours and inspire widespread reading.
8. Teachers ought to inspire use of digital devices within side the lecture rooms.
9. Different Methodologies can be followed to train loads of subjects to decrease monotony.
10. Teachers should inspire the idea of flipped lecture rooms to make the beginners accountable and active.
11. Teachers should report their lectures and add them.
12. Teachers ought to inspire the scholars to behavior experiments, thereby making the getting to know manner sensible oriented.
13. Teachers should assign duties to college students on rotation basis.
14. Teachers should draw figures whilst explaining the principles.
15. Teachers ought to offer case research for school room discussions.
16. Teacher ought to inspire the scholars to give in-elegance debates or keep on-line forums.
17. Teacher should inspire the scholars to put in force extra instructional technology

(Thaha & Mohammed, 2020)

9. Conclusion

The left brain and right brain dominance are stereotypes and any person may have strengths and weaknesses from both set. There may also be variations within side the way the brain processes diverse categories of cognitive skills. e.g., both left-brained and right-brained humans may be good at spelling however how they do it could be distinctive. Left brains memorize the sequence of every letter in a word; right brains memorize the picture of the entire word. As an instructor or tutor, in order to cater to a wide range of students, whether left, right or middle-brained, it'd benefit them to observe their own personal learning style and which side of the brain is dominant in them. The dominant side could ultimately have an effect on the teaching techniques used. In a society and education system that typically favors and embraces the left-brain ways of learning, it is more useful for instructors to have a stability and not simply adhere to at least one kind of learning, the left- brain, as they have been proven do most of the time. This could cause many college students drift off or daydream, particularly right-brained college students, and lose the critical data being discussed. Teachers can take this knowledge and use it to develop lesson plans to deal with both types of college students. Understanding left-brain and right-brain dominance will prepare them to take on different

teaching techniques and use these new strategies for the advantage of their college students. By accepting all the particular attributes of every side of the brain and its learning styles and incorporating teaching methods that encompass both, all college students will have a fair chance at learning and a better understanding (Thaha & Mohammed, 2020).

References

- Corballis, M. C. (2014). Left Brain, Right Brain: Facts and Fantasies. *PLoS Biology*, 12(1).
<https://doi.org/10.1371/journal.pbio.1001767>
- Kord, M. A. (n.d.). *Using Communicative Language Teaching (CLT) On Speaking Fluency ; A Case Study of Iranian EFL Students in Zahedan Shaghayegh Mojavezi **.
- Mazaheri, S., Tefl, M. A., Languages, F., & Branch, S. (2019). *Relationship between Iranian EFL Teachers ' Brain Dominance , Teaching Experience and their Teaching Style*. 7(25).
- Nielsen, J. A., Zielinski, B. A., Ferguson, M. A., Lainhart, J. E., & Anderson, J. S. (2013). *An Evaluation of the Left-Brain vs . Right-Brain Hypothesis with Resting State Functional Connectivity Magnetic Resonance Imaging*. 8(8).
<https://doi.org/10.1371/journal.pone.0071275>
- Oflaz, M. (2011). The effect of right and left brain dominance in language learning. *Procedia - Social and Behavioral Sciences*, 15, 1507–1513.
<https://doi.org/10.1016/j.sbspro.2011.03.320>
- Özyel, M. (2016). *The Correlation between Brain Dominance and Language Learning Strategy Use of English Preparatory School Students*. June.
- Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2008). Learning styles concepts and evidence. *Psychological Science in the Public Interest, Supplement*, 9(3), 105–119.
<https://doi.org/10.1111/j.1539-6053.2009.01038.x>
- Savadkouhi, Z. B. (2013). *The Effect of Hemispheric Dominance on Learning Vocabulary Strategies among Iranian EFL Learners*. 2(2), 347–361.
- Thaha, S., & Mohammed, B. (2020). *Maintaining a Balance between Left and Right Brain Dominant Students*. August.
- Weisi, H., & Khaksar, Z. (2015). The effect of hemispheric dominance on Iranian {EFL} learner's creativity in writing. *International Journal of English and Education*, 4(2), 383–397.
- YULE, G. (1982). the Objective Assessment of Aspects of Spoken English. *World Englishes*, 1(4), 193–199. <https://doi.org/10.1111/j.1467-971X.1982.tb00500.x>