

Investigating Students' Left-Right Brain Dominance

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Abstract

Students are different in various respects: motivation levels, abilities, needs, interests, learning speed, strategies and styles. Every student is a unique person able to demonstrate different individual skills, and is constantly learning and improving. Left hemisphere is known to process verbal, abstract, analytical information in a linear, sequential manner. It concentrates on differences and contrasts, sees small parts that represent the whole, and is concerned with reasoning abilities such as maths and language. Therefore, left brain has a local nature. Many teachers have difficulties with some children such as keeping them still and focused, finishing assignments, keeping organized, grasping concepts the way they are taught by understanding this research. It may help teacher to give the best learning style to the student. The result showed that 75% students are left brain dominance, 15% students are right brain dominance, 10% students are all brain dominance. It may help the students and teacher to decide the best method for them in learning process.

Key words: Left and Brain Dominance, Learning Style

INTRODUCTION

Students are different in various respects: motivation levels, abilities, needs, interests, learning speed, strategies and styles (Pustaka, 2010). Every student is a unique person able to demonstrate different individual skills, and is constantly learning and improving (E. Putri, 2022), (Ristiandika Arrahman, 2021), (Samanik & Lianasari, 2018). An aspect of the learning process that has recently received considerable attention is that of learning preferences (Fithratullah, 2021), (Dakwah et al., 2021). Research in this area has enlightened teachers regarding the ways learners learn. As a result, teachers have become more and more sensitive to students' learning differences. In fact, different learning modes entail different instructional techniques (Robot, 2007), (H Kara, 2014), (Firmansyah et al., 2018). In other words, if students are taught according to their preferred ways of learning, the learning/teaching process is likely to be effective (Gerai et al., 2021), (Siregar & Utami, 2021), (Wahyudi & Utami, 2021). University faculty have, for a long time, emphasized the content of what is to be learned; many of them tend to spoon feed students thinking that if they do not cover the curriculum, they will not achieve the aims of the course (Firmansyah M et al., 2017), (N. U. Putri et al., 2020), (Wulandari, 2018). It is high time they considered the individual learning-style characteristics and brain behaviour of their students (Pratama, 2018), (Asia & Samanik, 2018).

A number of studies have been conducted. They found most of the participants have a visual mode of learning, whether predominantly or in combination with the auditory mode. In addition, the majority of the students are found to have a slight preference either to the left- or the right-brain hemisphere (Agustina & Utami, 2021), (Yudha & Utami, 2022). Secondly, they tried to determine the effects of right and left brain dominance on students' academic achievement and learning English (Setri & Setiawan, 2020), (Mertania & Amelia, 2020), (Lestari & Wahyudin, 2020). Language classrooms consist of students who have different learning styles and these learning styles are related with the dominance of right or

left brain (Nindyarini Wirawan, 2018), (Keanu, 2018), (Nurmalasari & Samanik, 2018). Their research will provide the teachers to find out the dominant part of their students' brains and use the appropriate classroom techniques, methods and tools according to them (Prayoga & Utami, 2021), (Wahyuni et al., 2021), (Gustanti & Ayu, 2021).

Left hemisphere is known to process verbal, abstract, analytical information in a linear, sequential manner (E. Putri & Sari, 2020), (Apriyanti & Ayu, 2020), (Firmansyah et al., 2017). It concentrates on differences and contrasts, sees small parts that represent the whole, and is concerned with reasoning abilities such as maths and language (Gita & Setyaningrum, 2018), (Sidiq & Manaf, 2020), (Sulistiani & Aldino, 2020). Therefore, left brain has a local nature. On the other hand, right hemisphere processes non-verbal, concrete, and spatial information (R Arrahman, 2022), (Pajar et al., 2017), (*MEMBIMBING Dan MENGUJI KP 2020.Pdf*, n.d.). Right brain gives attention to similarities in patterns, and looks at from a holistic perspective. For that reason, right brain is found to have a global bias (Suprayogi et al., 2021), (Samanik, 2021). Artistic abilities such as music and graphics are among the functions of the right brain (Sidiq et al., 2015), (Fithratullah, 2019). However, it is necessary to bear in mind that the right and the left hemispheres are not completely independent and there are fibers (corpus callosum) that connect these halves, but a person is believed to rely on one halve of the brain more than the other, and his brain dominance is assumed to determine his preferences, style, personality characteristics, or even career choices.

The research problems of this research are: What is the most brain dominance at Teknokrat Indonesia University? Many teachers have difficulties with some children such as keeping them still and focused, finishing assignments, keeping organized, grasping concepts the way they are taught by understanding this research. It may help teacher to give the best learning style to the student.

LITERATURE REVIEW

Students are different in various respects: motivation levels, abilities, needs, interests, learning speed, strategies and styles (Webqual, 2022), (Hartanto et al., 2022). Every student is a unique person able to demonstrate different individual skills, and is constantly learning and improving. An aspect of the learning process that has recently received considerable attention is that of learning preferences (Kutipan et al., n.d.), (Artikel, 2020). Research in this area has enlightened teachers regarding the ways learners learn. As a result, teachers have become more and more sensitive to students' learning differences. In fact, different learning modes entail different instructional techniques. In other words, if students are taught according to their preferred ways of learning, the learning/teaching process is likely to be effective (Arwani & Firmansyah, 2013), (Firma Sahrul B, 2017), (Website & Cikarang, 2020). University faculty have, for a long time, emphasized the content of what is to be learned; many of them tend to spoon feed students thinking that if they do not cover the curriculum, they will not achieve the aims of the course. It is high time they considered the individual learning-style characteristics and brain behaviour of their students.

METHOD

This chapter is discussed under the following sub-headings: Research design, population and sample, research instrument, procedure for data collection and method of data analysis. This study adopted survey design. Survey is a descriptive design that uses a representative

sample to collect data for systematic description of existing situation or phenomenon. It is concerned with the collection of data for the purpose of describing and interpreting existing conditions, prevailing practices, beliefs, and attitude among others (Safitri et al., 2019), (Ramdan & Utami, 2020). Survey design as one in which a group of people is studied by collecting and analyzing data through the use of such instrument as questionnaire from only a few population considered applicable to this study for its particular interest in collecting data using just a few students considered to be a representative sample of the entire students of Teknokrat Indonesia University. This research comprises of 20 students. Stratified random sampling was used to select the sample. They were consisting 10 student male and 10 female students. Questionnaires were administered to the 20 students and out of out the 10 questionnaires, 30 were retrieved and analyzed. The instrument consist of 2 sections, section A which contains the demographic characteristics of the students, section B determines the students when they are communicate or act with other people. Validation is the process of making sure that the instrument really test the variables or categories the researcher has claimed he/she wants to test wants to test in he/her studies. In this study therefore, the researcher, haven constructed the instrument, provided the respondents with clear guidelines on what is expected of them. The guideline included among other things, the purpose of the study, research questions or hypotheses. This idea was to help the respondent to determine which item actually elicited the information they intended to elicit. Reliability of instrument involves the use of same measuring object to measure, test or evaluate the same object at different periods in time and at each time receiving the same or similar result. The researcher therefore employed test-re-test technique to determine the reliability of the research instrument used in the present study. The researcher administered the instrument on 20 respondents who had the same characteristics as the main survey group and this were randomly selected.

RESULTS AND DISCUSSION

This chapter dealt with data analyses, results and discussions. The methods of analyses used include descriptive statistics, t-test was employed to test the hypotheses. 10 questionnaires were administered to the respondents (Teknokrat Indonesia University students).

Data Analyses and Results

THE LEARNERS' BRAIN DOMINANCE

Table 1 shows the frequency distribution of the left-brain dominant (LBD) and right-brain dominant (RBD) learners out of the seventy sample student-respondents.

Table 1. Frequency Distribution of Left-Brain Dominant and Right-Brain Dominant Learners

Learner Type	Number	Percent
LBD Learner	15	75%
RBD Learner	3	15%
All	2	10%

Learners		
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15 out of 20 learners (75 percent) are left-brain dominant (Table 1). The two leftside structures of the brain: left cerebral hemisphere (analytical) and left limbic system (sequential) were combined to represent the so called left brain thinking, characterized by logical, analytical, sequential and rational thinking. The LBD learners as having left hemisphere dominant in all activities involving language, arithmetic, and analysis. Left-brain learners as those that best absorb material by listening to lectures in which the material is logical and with a set of defining rules. Enomoto further described LBD learners as those that take neat notes; keep a well-organized binder; consider timed tests not overly challenging; read directions carefully and thoroughly; follow sequential reasoning; and seek definitive final answers and closure.

These learners' left hemispheres are better at recognizing sequences of words and letters; control the logic, reasoning, and analytical thought processes; can focus on details; but with difficulty comprehending the whole picture. Moreover, their left hemispheres focus attention, isolate, fix, and make explicit certain features, giving learners the power to learn and to make things. Melina characterized such left hemispheres of LBD learners as in charge of carrying out logic and exact mathematical computations.

Three of twenty learners (15 percent) are right-brain dominant (Table 1). The two right side structures of the brain: right limbic system (interpersonal) and right cerebral hemisphere (imaginative) were combined to represent the so called right brain thinking, characterized by global perception, intuition, synthesis and emotional expression. The RBD learners as those whose right hemispheres are more specialized for the analysis of space and geometrical shapes and forms. It illustrated their right hemisphere as creative half that can see the whole out of parts, thus allowing the learners, as he said, to connect puzzle parts together. The RBD thinkers according to Enomoto are persons that scan directions, rather than listen to or thoroughly read directions; visualize a picture to help them remember facts; tend to be day dreamers who lose track of time; thrive on handson learning; but struggles on sitting, listening and taking notes. The right hemisphere of these learners, grasp things as whole; exhibit a broad perspective; capable of taking the perspective of the other; and allow empathy and social side of human beings to flourish. The right hemisphere was nonverbal, nonmathematical and nonsequential in nature; largely spatial and imagistic. The right hemisphere of RBD learners performs some mathematics, but only for rough stimations and comparisons.

CONCLUSION

University teachers need to understand the diversity in students and address it in their daily classroom practices. This might be easier said than done, for it seems to be a challenging task, especially in classes of forty or more students, or in large amphitheatres, as is the case in the Teknokrat Indonesia University context. To cater for individual learning profiles and needs, teachers are required to vary their teaching/testing approaches, to balance classroom activities, to provide alternatives. This would, no doubt, make a huge difference in their students' learning. We can conclude that most of Teknokrat students are left brain dominance because that lecture can elect the best method for student.

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