

INTERNATIONAL RESEARCH JOURNAL ON ADVANCED SCIENCE HUB

e-ISSN : 2582 - 4376
Open Access

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Available online at www.rspsciencehub.com

Special Issue of First International Conference on Advancements in Engineering, Management, Science & Technology (ICEMST 2021)

Hemisphericity of Higher Secondary School Students

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Abstract

Hemisphericity refers to a preference for using one hemisphere of the brain over the other hemisphere to have stronger control over some functions of the mind and body. The Present study investigated the Brain Hemisphericity of Higher Secondary school students in Chennai. Survey method has been used and Stratified Random Sampling technique was adopted. To achieve the purpose of the study, a sample of 550 Higher Secondary School Students were selected. The study reveals that there is a significant difference between Brain Hemisphericity with respect to their Management of School.

Keywords: *Hemisphericity, Stratified Random Sampling, Higher Secondary School Students, Management of School.*

1. Introduction

Hemisphericity postulates that an individual can be Left, Right or Integrated brain dominant. Since the two hemispheres are specialized and perform different functions, the individuals with different Brain Hemisphericity will respond to the same task in different ways all of which will be in accordance with their Brain Hemisphericity. The left hemisphere of the brain is rational, analytical, and verbal, while the right hemisphere is holistic and intuitive, responsive to visual imagery and Integrated brain is the combination of both. Left hemisphere is controlling important movements like writing, eating, driving, washing and typing, while the rest of the ten percent population's brain and bode act the other way. Maintenance of the continual function of these hemispheres with certain unique functions affirms their twin existence. The left hemisphere handles logic, sequence, literalness, and analysis. The right takes care of synthesis, emotional expression, context, and the big picture. Yet, the beauty lies in the fact

both hemispheres work not in contradiction but in collaboration; not work in isolation but work together. Among us someone is a "Right-brained" or "Left-brained" individual. This is called "Brain Hemisphericity", meaning that an individual has a natural preference for processing information on one side of the brain. The right side is considered the intuitive or spontaneous side, while the left side is logical. Knowing an individual's brain Hemisphericity can help us to understand his/her "ways" of thinking, behaving, speaking, and functioning. Also, it can help parents and educators tailor activities to a child's natural learning preferences. Brain Hemisphericity is the ability of one cerebral hemisphere (commonly referred to as the left or right side of the brain) to predominately control specific tasks.

2. Operational Definitions of Key Terms

Hemisphericity refers to the dominance of one hemisphere over the other in cerebral functions.

Left Brain Hemisphericity refers to the dominance of left hemisphere over the other in control of cerebral functions.

Right Brain Hemisphericity refers to the dominance of right hemisphere over the other in control of cerebral functions.

Integrated Brain Hemisphericity refers integration of both the hemispheres in processing functions.[1-5].

3. Need and Significance of the Study

Human beings are found to differ from each other and among themselves in varieties for ways and dimensions. These individual differences are influenced by physical, mental, achievement, emotions, interest, aptitude, attitude, beliefs, learning and so on. Notable factor is Brain Hemisphericity which can influence the academic achievement of the students. Therefore, the need is felt to study the Brain Hemisphericity of Higher Secondary School Students. Students of present generation are stressed due to academic burden and parental pressures. Less consideration is given for students' preference in selecting their higher studies. The students are forced to do tasks on parent's preference and decisions which create problem in performance. We can draw a conclusion that teachers and parents need to understand student's Brain Hemisphericity with the intension of helping them to choose a fitting career in their life.

4. Objective of the Study

To study whether the students studying in different schools based on School Management differ significantly in their Brain Hemisphericity.

5. Hypothesis of the Study

There is no significant difference among Students studying in different Management of Schools in their Brain Hemisphericity.

6. Methodology

Table.1. Summary of Results of Brain Hemisphericity with respect to the Management of Schools

| F | Govt. (1) | | Govt. Aided (2) | | Private (3) | | Sign. level | GD |
|-----|-----------|------|-----------------|------|-------------|------|-------------|-----------|
| | M | S.D | M | S.D | M | S.D | | |
| LB | 16.3 | 10.5 | 16.4 | 10.7 | 22.0 | 10.9 | P< 0.05 | 1,3 & 2,3 |
| RB | 22.7 | 13.4 | 20.1 | 11.9 | 25.9 | 14.7 | P< 0.01 | 2,3 |
| IB | 6.2 | 2.3 | 6.2 | 2.1 | 6.0 | 3.1 | P> 0.05 | None |
| OBH | 45.3 | 8.3 | 42.9 | 7.1 | 54.0 | 10.5 | P< 0.05 | 2,3 |

The present study focuses on the Brain Hemisphericity of the Higher Secondary School Students. Normative Survey method was used for the present study.[6,7]

6.1 Sample of the Study

550 Higher Secondary School students were selected randomly from Government, Government Aided and Private schools in Chennai.

6.2 Sampling Technique

Stratified Random Sampling technique was adopted to select the sample. This technique is mainly used to reduce the population heterogeneity and to increase the efficiency of the estimates. In this method the population is divided into a number of subgroups or strata like Government, Government Aided, and Private Schools. Then from each stratum simple random sampling procedure was adopted to select the students and these students form the required sample from the population.

6.3 Tool used for the Study

Brain Hemisphericity Tool was developed and validated by the investigator and the supervisor.

6.4 Statistical Techniques

The data were analyzed with SPSS for windows, using basic statistical measures of central tendency and relationship between variables.

➤ Descriptive Analysis (Mean and Standard Deviation)

➤ Differential Analysis (F- ratio)

7. Data Analysis and Interpretation

7.1 Brain Hemisphericity with respect to Management of the Schools

The Mean, Standard Deviation and F-ratios were calculated for the Overall Brain Hemisphericity and its three factors with respect to Management of the Schools and the same is presented in Table 1.

LB – Left Brain, RB – Right Brain, IB – Integrated Brain, OBH – Overall Brain Hemisphericity, F – Factors, GD – Group Differed

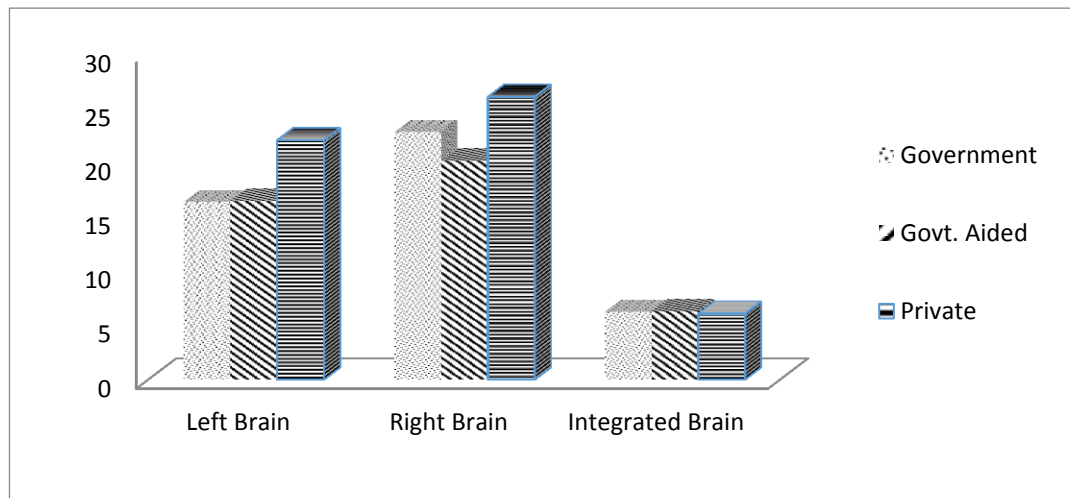


Chart.1. Brain Hemisphericity with respect to Management of Schools

From Table 1, it can be understood that the Overall Brain Hemisphericity score was high (54.05) for the students studying in Private Schools and the same was low (42.91) for those in Government Aided Schools. The F-ratios calculated for the scores on the Overall Brain Hemisphericity and its three factors with respect to different Management of the Schools revealed that the students belonging to differed significantly in Overall Brain Hemisphericity and its two factors namely Left Brain Hemisphericity and Right Brain Hemisphericity. Further Analysis of differences between the individual groups tested through the Tukey-HSD revealed that in the Overall Brain Hemisphericity and in its two factors namely Left Brain Hemisphericity and Right Brain Hemisphericity, the students studying in Private Schools differed significantly from those of Government Aided Schools, where the students belonging to Private Schools had better Brain Hemisphericity than the students of Government Aided Schools. As for the factor Left Brain Hemisphericity, the students belonging to Private Schools differed significantly from those of Government and Government Aided Schools, where they perceived more Left Brain Hemisphericity than the students of Government and Government Aided Schools. As for the factor Right Brain Hemisphericity, the students belonging

to Private Schools differed significantly from those of Government Aided Schools, where they perceived more Right Brain Hemisphericity than the students of Government Aided Schools. The Other groups did not differ significantly among themselves.

8. Major Findings of the Study

- The Students belonging to Management of the Schools differed significantly in Overall Brain Hemisphericity and its two factors namely Left Brain Hemisphericity and Right Brain Hemisphericity.
- The Students studying in Private Schools differed significantly from those of Government Aided Schools, where the Students belonging to Private Schools had better Brain Hemisphericity than the Students of Government Aided Schools.
- The Students belonging to Private Schools differed significantly from those of Government and Government Aided Schools, where they perceived more Left Brain Hemisphericity than the Students of Government and Government Aided Schools.
- The Students belonging to Private Schools differed significantly from those of Government Aided Schools, where they perceived more Right Brain Hemisphericity

than the Students of Government Aided Schools.

9. Educational Implications of the Study

Brain Hemisphericity is one of the important issues to be considered in the context of individual differences. The focus of this study was on the Higher Secondary Students. The study reveals that with respect to individual differences more directed efforts need to be taken by the teachers, choosing the career options and framing the curriculum respectively. The Hemisphericity could be attributed to the teacher's increased awareness of teaching styles and the efforts to include a variety of teaching methods and learning activities are believed to promote imagination and spatial skills which are associated with right brain characteristics. The information of Brain Hemisphericity helps the Parents and Students advisors in Higher Education to place Students in courses that are compatible with interest and abilities. Also, it can help Students select courses that will meet their needs. This will help to decrease the number of Students dropping out of schools/ colleges or changing majors several times because of the lack of fit between their cognitive styles and the requirement of certain fields.

Conclusion

As the study revealed that there is a significant difference between Brain Hemisphericity with respect to the Management of School. So, Teachers and Parents need to motivate the students, render their encouragement and support to the students. They must recognize that Brain Hemisphericity is one of the major factors influencing differences among individuals. Guiding the Students on the basis of their abilities and capacities will influence their performance to a great extent.

References

Journals

- [1] Liu Yangyang, (2012). International Note: Between-domain relations of Chinese High School Students Academic Achievements; *Journal of Adolescence*,35(4),1097 – 1098.
- [2] MerveOflaz, (2011). The Effect of Right and Left-Brain Dominance in Language Learning; *Social and Behavioral Sciences*, 15(1),1507-1513.
- [3] Prat and Baynes, (2007). The Representation of Discourse in the two Hemispheres: An

Individual Differences Investigation; *Brain and Language*, 100 (3), 283 -294.

- [4] Serap Tufekci and Melek Demirel, (2009). The Effect of Brain based Learning on Achievement, Retention, Attitude and Learning Process; *Social and Behavioral Sciences*,1(1),1782- 1791.
- [5] Sato and Aoki (2006). Right Hemispheric Dominance in processing of Unconscious Negative Emotion; *Brain and Cognition*, 62 (3), 261-266.

Book

- [6] Aggarwal, J.C. "Essential of Educational Psychology", Vikas Publishing House Pvt. Limited, New Delhi. (2000).
- [7] Sousa, D.R. "How the brain learning", Reston,VA:NASSP. (1995).