



Cerebral hemisphericity of Higher Secondary School Students.

KEYWORDS

Brain hemisphericity, higher secondary students

G. Vinitha

Ph.D. Scholar, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore

Dr. Indu.H

Associate Professor, Faculty of Education, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore

ABSTRACT Many researchers identify that each individual differ in their brain hemisphericity. The present study investigated the brain hemisphericity of higher secondary school students of Coimbatore district. A 50 item standardised questionnaire was used to collect data on brain hemisphericity. A total of 1005 school students were randomly selected as the sample for this study. The results of the analysis of data showed that majority of the students are left brain dominant and there is no association between brain hemisphericity and variables like Gender, Medium of Instruction and Locality.

Introduction

Human learning has been an important field of study. Since ages, how people think and learn is not only the field of study of the cognitive, developmental and neuroscientists but also to the common man (Parhar, 2006). Education is a field of diversity. It is about the different goals people have for education, different programs to be conducted in the schools, various ways adults' exhibits their competencies in their work and the multitudes of ways students learn. In a classroom, teacher is to facilitate successful learning opportunities for all learners; he or she must know the learner. The learner, of any age is a product of nature and nurture. Each child belonging to different culture, race, socio economic status, gender and age deserves to have an equal opportunity to be successful in school. Knowing each students' talents is essential for providing successful learning opportunities. Understanding learning differences will help educators facilitate, structure and validate successful learning of every student.

By the turn of the nineteenth century many new theories emerged about how people learn. All the theories presented new way of thinking about the most important human neurological organ- The Brain. The learning, which young children seem to do effortlessly and which continues for life, must be understood in the context of the brain, which is our complex body organ.

Human brain functions in many ways and acts as two brains which are right and left hemispheres. Hemisphericity refers to the concept that an individual processes information primarily through the left hemisphere or the right hemisphere or a combination of both (Saleh, 2001). In many cases an individual relies on one hemisphere of the brain more than the other. The idea that a person has a more dominant hemisphere has many further implications. Individual, occupational, cultural and educational preferences are all possible areas that are affected by brain hemisphericity (Iaccino, 1993).

Right and left brain function reveals that the two halves of the brain process information differently, and that both hemispheres are equally important. When a person develops dominance towards one side of their brain, they tend to have certain characteristic and areas of interest in common.

Left side of the brain is the dominant hemisphere where language and speech are produced. The left hemisphere is concerned with logical and analytic skills. Left brain functions in a linear way. It likes clear logic presented without confusion of ambiguity or paradox.

The right hemisphere sees relationships and connections. It functions in a simultaneous, non verbal way. It takes in the whole and seeks patterns and spatial coherence. Right side of the brain is the initial receiver of incoming information. The Right hemisphere is the centre for visual, rhythm, artistic and creative abilities. When a person is right brain dominant they are thought of as the dreamers, the artist and the musicians of the worlds. They do have similar characteristics and they tend to hold similar occupations.

Significance of the Study

Knowing the students' cognitive processes, is an important aspect in the field of teaching-learning. A teacher or an educational researcher can predict the student's interest and to some extent the achievement level if they have an idea of the brain's preferences. Hence a study was undertaken to study the brain hemisphericity of higher secondary students.

Objectives

- To find out the brain hemisphericity of higher secondary students
- To find out if there is any statistically significant association between brain hemisphericity and variables like gender, medium of instruction and locality.

Methodology

The current study was conducted in Coimbatore district. Survey method was used for the study. A personal data sheet and a standardised tool (SOLAT) was used for data collection. Data were collected from 1005 higher secondary school students (420 males, 585 females) selected from government, Private and Corporation schools in Coimbatore city.

Result of the study

Classification of higher secondary students based on their level of brain hemisphericity.

An attempt was made to study the brain hemisphericity of higher secondary students and the results obtained are

given in Table 1.

Table 1. Brain hemisphericity of higher secondary school students

Brain hemisphericity	No. of students	percentage
left brain	812	80.8
right brain	160	15.9
both	33	3.3

Table 1. shows that of the total students majority of them (80.8 percent) are found to be left brain dominant and 15.9 percent were right brain dominant. It was also found that 3.3 percent of the students belong to whole brain dominant.

Association between brain hemisphericity and gender

Table 2. presents the chi square value for the association between brain hemisphericity and gender.

Table 2 Brain Hemisphericity and Gender

Gender	Brain Hemisphericity			Df	χ^2
	Left brain	Right brain	Whole brain		
Male	330	76	14	2	2.591 ^{NS}
Female	482	84	19		

NS - Not significant df-Degrees of Freedom

From Table 2. it is seen that the chi square value obtained (2.591) is less than the critical value at 0.05 level (5.99), indicating that brain hemisphericity is not associated with gender. Hence the null hypotheses that "there is no significant association between brain hemisphericity and gender" is rejected.

Association between brain hemisphericity and medium of Instruction

Chi square analysis was done to find out if there is any association between brain hemisphericity and medium of Instruction and the value obtained is given in Table 3.

Table 3 Brain Hemisphericity and Medium of Instruction

Medium of Instruction	Brain Hemisphericity			Df	χ^2
	Left	Right	Whole		
Tamil	579	117	20	2	2.101 ^{NS}
English	233	43	13		

NS - Not significant df-Degrees of Freedom

From Table 3, it is seen that the chi square value obtained for medium of instruction (2.101) is less than the critical value at 0.05 level (5.99), and hence there is no significant association between brain hemisphericity and medium of instruction which ends up in rejecting the null hypothesis that "there is no significant association between brain hemisphericity and medium of instruction."

Association between brain hemisphericity and locality

Table 4. presents the chi square value for the association between brain hemisphericity and locality.

Table 4. Brain Hemisphericity and Locality

Locality	Brain Hemisphericity			df	χ^2
	Left brain	Right brain	Whole brain		
Rural	712	142	26	2	2.551 ^{NS}
Urban	100	18	7		

NS - Not significant

From Table 4. it is seen that the chi square value obtained for locality(2.551) is less than the Table value at 0.05 level (5.99), which shows that there is no significant association between brain hemisphericity and locality. Hence the null hypothesis that "there is no significant association between brain hemisphericity and locality" is rejected.

Conclusion

The above results show that majority of the students are left brain dominant and also the brain hemisphericity of students are not associated with gender, medium of instruction and locality. Hence steps should be taken to make students whole brained which helps in the overall development of the students.

REFERENCE

1. Iaccino, J.F. (1993). Left Brain- Right Brain Differences: inquires, Evidence and New Approaches. Hillsdale, New Jersey: Lawrence Erlbaum Associates. | 2. Parhar, M. (2006). Modern Teacher Training. New Delhi: Anmol Publications, Pvt.Ltd. | 3. Saleh, A.(2001). Brain Hemisphericity and Academic Majors: A Correlation Study.College Student Journal, 35(2),193. |