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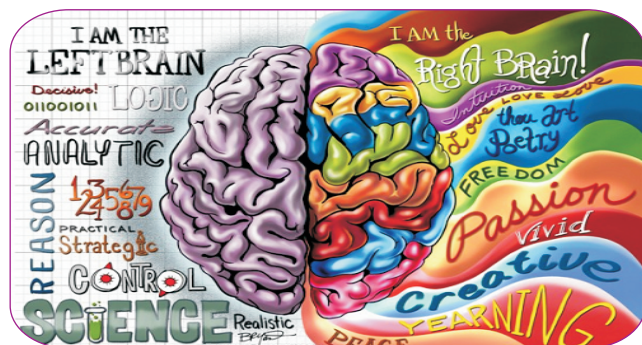
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A STUDY ON BRAIN DOMINANCE AND ACADEMIC ACHIEVEMENT OF HIGHER SECONDARY SCHOOL STUDENTS IN CHENNAI DISTRICT

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ABSTRACT :

Brain Dominance is one of the important issues to be considered in the context of individual differences. The Aim of this study is to find out the level of Brain Dominance and Academic Achievement of Higher Secondary School Students and to determine if there is any relationship between Brain dominance and Academic Achievement of Higher Secondary School Students. The Sample of the study was selected by using Stratified Random Sampling technique which includes 300 Higher Secondary students of Chennai District. Survey Method was used to collect data. Brain Dominance was measured using the standardized scale Revised by E.C. Davis(1994) and Luciano Mariani(1996). Academic Achievement of the Students is measured by collecting the marks of Half-Yearly Examination. The data were analyzed using SPSS. Percentage analysis and Correlation analysis were the statistical techniques used. Study reveals that there is no relationship between brain dominance and Academic Achievement of Higher Secondary School Students in Chennai District.

KEYWORDS : Brain Dominance, Academic Achievement, Higher Secondary Students.

1. INTRODUCTION

Brain, anciently called the 'grey matter', the substance that makes the essence of man, if divided symmetrically, would beget two hemispheres, one the left hemisphere and the other right hemisphere and these twin hemispheres do not operate in an on-off switch mode, one powering down as soon as the other starts lighting up. Both hemispheres play a role in nearly everything the individuals do. Experts opine that certain regions of the brain are more active than the other, when it comes to certain functions. It is a proven fact that the left hemisphere controls the right side of the body and the right hemisphere controls the left side of the body. Around ninety percent of the population is right handed, leading to infer that around ninety percent of the population's left hemisphere is controlling important movements like writing, eating, driving, washing and typing, while the rest of the ten percent population's brain and body 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. 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 Dominance helps the parents and students advisors in Higher Education to place students in programmes that are compatible with interest and abilities. Also, it can help students select programmes 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. Teachers and parents

need to motivate the students, render their encouragement and support to the students. They must recognize that Brain Dominance has major factor influencing differences among individuals. Guiding the students on the basis of their abilities and capacities will influence their performance to a great extent.

Academic Achievement refers to the specified level of attainment or proficiency in academic work as evaluated by the Teachers, by standardized tests or by a combination of both. Everyone wants a good Academic Achievement for their better Life Career. For this, the School is the place to develop Discipline, Culture, Organize the taut of the students. This helps them to get better Knowledge, Cultivate Good Habits and to be successful in their life. It is very important for the student to have involvement in learning. This involvement help to prepare well for the exam and make the student enjoy by studying lessons.

2. NEED AND SIGNIFICANCE OF THE STUDY

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 dominance with the intension of helping them to choose a fitting career in their life.

Students 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 processing which can influence the academic achievement of the students. Therefore the need is felt to find out the Level and relationship between Brain Dominance and Academic Achievement.

Brain Dominance does affect the Academic Achievement of Higher Secondary School Students. So it is essential to study the Brain Dominance and their impact on academic achievement in the Higher Secondary School Students.

3. OPERATIONAL DEFINITIONS

3.1 BRAIN DOMINANCE

The Brain Dominance 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 left hemisphere of the brain is rational, analytical, and verbal, while the right hemisphere is holistic and intuitive, responsive to visual imagery. An individual's preference for using one's cognitive abilities. There are three styles of thinking – right brain (intuitive, spontaneous, qualitative), left brain (factual, analytical and quantitative) and whole brain (combination of both).

3.2 ACADEMIC ACHIEVEMENT

Academic Achievement is an ongoing process aimed at understanding and improving student learning. It involves making our expectations explicit and public; setting appropriate criteria and high standards for learning quality; systematically gathering, analyzing, and interpreting evidence to determine how well performance. When it is embedded effectively within larger institutional systems, assessment can help us focus our collective attention, examine our assumptions, and create a shared academic culture dedicated to assuring and improving the quality of higher education.

4. OBJECTIVES OF THE STUDY

The Objectives of the study are

1. To find out the Level of Brain Dominance and academic achievement of Higher Secondary School Students with respect to Gender, Locality, Nature of the School and Type of the School.
2. To study the relationship between Brain Dominance and Academic Achievement of Higher Secondary School Student.

5. HYPOTHESES OF THE STUDY

1. There is no significant relationship between Brain Dominance and Academic Achievement of Higher Secondary School Students.

6. METHOD OF STUDY

The present study focuses on the Brain Dominance and Academic Achievement of the Higher Secondary School Students. Since the present study deals with the existing condition, it is a descriptive survey research. It is concerned about conditions of relations that exist; practices that prevail, beliefs, points of view/attitude that are held, processes that are ongoing and effects that are being felt. Survey method is a method of collecting and analyzing data, obtained from large number respondents representing a specific population collected through highly structured and detailed questionnaire. Data are gathered, tabulated, classified, interpreted, compared, evaluated and then generalizations are made. Everything proceeds towards understanding and solving or reducing educational problems.

7. SAMPLE OF THE STUDY

Stratified Random Sampling technique was adopted to select the sample. Of all the methods of sampling procedures commonly used in survey method is Simple Random Sampling. 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.

8. TOOLS EMPLOYED FOR THE STUDY

8.1 DESCRIPTION OF THE TOOL

To study the problem, one may use various devices. The selection of the right tool is important for successful research. The tool is an instrument, which is used to collect data from the sample. In the present study, the tool namely, Brain Dominance Questionnaire is used to measure the Brain Dominance of the students. The Academic Achievement of the Higher Secondary School Students is measured by collecting the marks of Half-Yearly Examination.

The front sheet was designed to collect data about the personal, school and family related details of the student like Gender, Nature of the School, Locality of the Student, Type of the School. There was a provision in the front page for the students to fill their Half-Yearly Examination Marks.

8.2 BRAIN DOMINANCE INVENTORY

Brain Dominance Inventory is consists of 15 statements comprises of 3 options. The Students were requested to give responses based on their preferences against the three Options given below each questions. The questions are not categorized to dimensions.

In the present study Brain Dominance was measured using the standardized scale Revised by E.C. Davis(1994) and Luciano Mariani(1996). The scale consists of 15 items to categorize right, left or bilateral dominance based on the responses.

9. ANALYSIS AND INTERPRETATION OF DATA

Analysis involves the verification of the hypotheses and interpreting the results of the study. Data were collected from higher secondary school students on the following variables.

- + Demographic particulars
- + Brain Dominance
- + Academic Achievement

were subjected to statistical analysis. Analysis were categorized under

- Percentage analysis to understand the level of distribution of the selected sample in relation to the variables.
- Correlation analysis to find out the relationship between the variables.

10. PERCENTAGE ANALYSIS OF DATA RELATED TO BRAIN DOMINANCE AND ACADEMIC ACHIEVEMENT OF HIGHER SECONDARY SCHOOL STUDENTS

10.1 Level of Brain dominance and Academic Achievement of Higher Secondary School Students with respect to the Gender

The Level was calculated for the research variable Brain Dominance and Academic Achievement of Higher Secondary School Students with respect to the Gender. The results of the same are summarized in Table 1

TABLE 1

DIMENSIONS		LOW		MODERATE		HIGH	
		COUNT	%	COUNT	%	COUNT	%
Left Brain and Academic Achievement	BOYS(49)	25	51.02	19	38.77	5	10.20
	GIRLS(46)	7	15.21	18	39.13	21	45.65
Whole Brain and Academic Achievement	BOYS(24)	14	58.33	9	37.50	1	4.16
	GIRLS(19)	2	10.52	9	47.36	8	42.10
Right Brain and Academic Achievement	BOYS(110)	62	56.36	36	32.72	12	10.90
	GIRLS(52)	8	15.38	25	48.07	19	36.53

Low – Below 40% , Moderate – Between 40 % to 60%, High – Above 60%

10.2 Level of Brain dominance and Academic Achievement of Higher Secondary School Students with respect to the Locality

The Level was calculated for the research variable Brain Dominance and Academic Achievement of Higher Secondary School Students with respect to the Locality. The results of the same are summarized in Table 2

TABLE 2

DIMENSIONS		LOW		MODERATE		HIGH	
		COUNT	%	COUNT	%	COUNT	%
Left Brain and Academic Achievement	URBAN(89)	28	31.46	35	39.32	26	29.21
	RURAL(6)	4	66.66	2	33.33	0	0
Whole Brain and Academic Achievement	URBAN(41)	15	36.58	18	43.90	8	19.51
	RURAL(2)	1	50.00	0	0	1	50.00
Right Brain and Academic Achievement	URBAN(156)	67	42.94	60	38.46	29	18.58
	RURAL(6)	3	50.00	2	33.33	1	33.33

Low – Below 40% , Moderate – Between 40 % to 60%, High – Above 60%

10.3 Level of Brain dominance and Academic Achievement of Higher Secondary School Students with respect to the Nature of the School

The Level was calculated for the research variable Brain Dominance and Academic Achievement of

Higher Secondary School Students with respect to the Nature of the School. The results of the same are summarized in Table 3

TABLE 3

DIMENSIONS		LOW		MODERATE		HIGH	
		COUNT	%	COUNT	%	COUNT	%
Left Brain and Academic Achievement	BOYS(20)	11	55.00	8	40.00	1	5.00
	GIRLS(6)	1	16.66	3	50.00	2	33.33
	CO-ED(69)	20	28.98	28	40.57	21	30.43
Whole Brain and Academic Achievement	BOYS(14)	7	50.00	7	50.00	0	0
	GIRLS(2)	0	0	1	50.00	1	50.00
	CO-ED(27)	9	33.33	10	37.03	8	29.62
Right Brain and Academic Achievement	BOYS(54)	32	59.25	20	37.03	2	3.70
	GIRLS(7)	0	0	3	42.85	4	57.14
	CO-ED(101)	36	35.64	40	39.60	25	24.75

Low – Below 40% , Moderate – Between 40 % to 60%, High – Above 60%

10.4 Level of Brain dominance and Academic Achievement of Higher Secondary School Students with respect to the Type of the School

The Level was calculated for the research variable Brain Dominance and Academic Achievement of Higher Secondary School Students with respect to the Type of the School. The results of the same are summarized in Table 4

TABLE 4

DIMENSIONS		LOW		MODERATE		HIGH	
		COUNT	%	COUNT	%	COUNT	%
Left Brain and Academic Achievement	GOVT.(37)	13	35.13	17	45.94	7	18.91
	AIDED(26)	21	80.76	3	11.53	2	7.69
	PRIVATE(32)	7	21.87	11	34.37	14	43.75
Whole Brain and Academic Achievement	GOVT.(9)	3	33.33	4	44.44	2	22.22
	AIDED(16)	7	43.75	8	50.00	1	6.25
	PRIVATE(18)	6	33.33	6	33.33	6	33.33
Right Brain and Academic Achievement	GOVT.(54)	21	38.88	21	38.88	12	22.22
	AIDED(61)	32	52.45	23	37.70	6	9.83
	PRIVATE(47)	16	34.04	18	38.29	13	27.65

Low – Below 40% , Moderate – Between 40 % to 60%, High – Above 60%

11. PEARSON'S PRODUCT MOMENT CORRELATION

The Pearson's product moment correlation were calculated for Left Brain Dominance, Right Brain Dominance and Academic Achievement of Higher Secondary School Students and the same are given in the table 5

Table 5

Summary of results inter-correlation between Left Brain Dominance, Right Brain Dominance and Academic Achievement.

Dependent Variable	Independent Variable	Pearson's Correlation	Level of Sign. 2 tailed	Group Differed	Level
Academic Achievement	Left Brain Dominance	0.071	P>0.05	None	Negligible
	Right Brain Dominance	0.078	P>0.05	None	Negligible

From table 5 it is revealed that r-value was correlated with all the three variables such as Left Brain Dominance, Right Brain Dominance and Academic Achievement did not differ significantly at 0.05 level.

- There exists a negligible relationship between Left Brain Dominance and Academic Achievement.
- There exists a negligible relationship between Right Brain Dominance and Academic Achievement.

12. DELIMITATIONS OF THE STUDY

- 1) Due to time constrain the study was limited to 300 samples only.
- 2) Due to time constrain the study was limited to Chennai District only.
- 3) Due to time constrain the study was limited to Higher Secondary School students only.

13. SUGGESTIONS FOR FURTHER RESEARCH

1. The further research of present investigation under mentioned might to be educationally beneficial.
2. The study could be replicated with another district, city, and state of different stage age group students.
3. The study was limited to the higher secondary school students only. It could be extended to all other levels of education. Including Undergraduate Students, Post graduate Students and Teacher Trainees of Colleges of Education.
4. The same study may be attempted with a larger sample of different areas.
5. Further research is needed to examine how this knowledge can help the Educators, Parents and Students to improve the learning process to better learning in students.
6. A qualitative approach could be adopted for in-depth understanding of the learning capabilities of the students.
7. Researches done with students of different age and background will provide educators at the school and college levels with the knowledge necessary to teach better.

14. CONCLUSION

The Empirical results of previous studies proved that the Brain Dominance influence on the Academic Achievement of the students. But the result of present study reveals that there is no relationship between Brain Dominance and Academic Achievement.

BIBLIOGRAPHY

Book with Single Author:

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

Research Journal:

Daniel H. Pink (2006). "A Whole new mind" Penguin Books India Pvt, New Delhi ISBN: 1-59448-171-7.
Patricia Wolfe (2010). "Brain Matters" translating research into classroom practice 2nd edition ISBN: 978-1-4166-1067-0.

Articles in Reference Books (unsigned and signed):

Andras Jansen et.al (2007). The Association between Scalp Hair –Whorl Direction, Handedness and Hemisphere

- Language Dominance. Is there a common genetic basis of lateralization? ; *Neuro Image*, Volume 35, Issue 2, 1 April 2007, Pages 853 – 861.
- Catherine wallez and Jacques vauclair(2011).Right Hemisphere Dominance for Emotion Processing in baboons;*Brain and Cognition*, Volume 75, Issue 2, March 2011, Pages 164-169.
- Charislengen, et.al (2009).Anomalous Brain Dominance and the Immune System : Do left-handers have specific immunological patterns? ; *Brain and Cognition*, Volume 69, Issue 1, February 2009, Pages 188- 193.
- Fernandez, Sanny F (2011).Brain Hemisphericity and Mathematics Achievement of High School Students; West Visayas University Thesis.
- Hamid Ashraf, Mona Tabatabeeyazdi, Zeinabkafi(2014). The Relationship between Iranian EFL students' Brain Dominant Quadrants and Reading Comprehension Skill; *Social and Behavioral Sciences*, Volume 98, 6 May 2014, Pages 292 – 296.
- Habin Li, Richard Walker, Derrick Armstrong(2014). International note: Parenting, Academic Achievement and Problem Behavior among Chinese Adolescents; *Journal Adolescence*, Volume 37, Issue 4, June 2014, Pages 387 -389.
- Izzettinkok(2014). Listening Comprehension Achievement and Brain Dominance; *Social and Behavioral Sciences*, Volume 122, 19 March 2014, Pages 329- 334.
- Izzettinkok (2010). The Relationship between Students' Reading Comprehension Achievement and their Attitudes towards Learning English and their abilities to use reading strategies with regard to Hemisphere Dominance; *Social and Behavioral Sciences*, Volume 3, 2010.
- Kemal Ozgen, BernaTataroglu, Huseyinalkan(2011).An Examination of Brian Dominance and Learning Styles of Pre-service Mathematics Teachers.
- MerveOfiaz (2011).The Effect of Right and Left Brain Dominance in Language Learning; *Social and Behavioral Sciences*, Volume 15, 2011, Pages 1507- 1513.
- Pinel, Philippe, DehaeneStanislas (2010). Beyond Hemisphere Dominance : Brain Regions underlying the joint lateralization of Language and Arithmetic to the Left Hemisphere; *Jornal of Cognitive Neuroscience*, 2010.
- Prat and Baynes(2007). The Representation of Discourse in the two Hemisphere : An Individual Differences Investigation; *Brain and Language*, Volume 100, Issue 3, Pages 283 -294.
- SerapTufekciandMelekDemirel(2009). The Effect of Brain based Learning on Achievement, Retention, Attitude and Learning Process;*Social and Behavioral Sciences*, Volume 1, Issue 1, 2009, Pages 1782- 1791.
- Szirony, Burgin and Elrod,L.M(2007). Brain Hemisphere Dominance and Vocational Preference : A Preliminary Analysis; University of Arkansas at Little Rock : USA.
- Sato and Aoki (2006). Right Hemispheric Dominance in processing of Unconscious Negative Emotion; *Brain and Cognition*, Volume 62, Issue 3, Pages 261-266.



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