

A comparative study of Mental Ability on the basis of Brain Hemisphere Dominance.

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In the present study Mental Ability of the student of senior secondary school is compared on the basis of their brain hemisphere dominance. The sample of the study consisted of 800 students(N=800). The brain hemisphere dominance was found out with the help of SOLAT test, which resulted in classifying the students into right brained, left brained and integrated brained. Mental Ability of right brained, left brained, integrated brained students was compared by applying t-test.

Introduction:

Mental Ability is one of the most talked about subjects within psychology, there is no standard definition of what exactly constitutes intelligence, Individuals differ from one another in their ability to understand complex ideas, to adapt effectively to the environment, to learn from environment, to learn from experience, to engage in various form of reasoning, to overcome experience. Mental Ability of individual depends upon the brain dominance of the students.

Brain Dominance or Hemisphericity refers to the concept that an individual processes information primarily through the left hemisphere or the right hemisphere or a combination of both i.e, integrated hemisphere (Saleh,2007) the idea that a person has a more dominant hemisphere has many further implication. Individual, occupational,cultural and educational preferences are all possible areas that are affected by brain hemisphericity (Iaccina,1993) for example, left- moders are described as more logical and rational whereas right- moders are more imagi-

native and creative with respect to occupation and education, a study done by Amany Salch revealed a correlation between brain hemisphericity and choice of major (2001) the result from this research study showed that students majoring in arts, literature, education, communication, nursing and law were found to be right brained dominant, whereas students majoring in business, engineering and science showed left- brain dominance(Salch,2001).

These findings provide information that could be useful for educators in the future. Administrators and teachers in middle schools, high schools and colleges could use knowledge of a student's hemisphericity to help guide them into career and educational path in which they would excel. Knowledge of a child's hemisphericity to help teachers to better accommodate students need in the classroom.

Studies have shown that students who are taught through methods that correspond with their hemispheric style achieved higher test scores (Salch,2001).to amplify and unity the

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knowledge of left and right brain characteristics to achieve whole brain instruction is a current focus of many educators (Repress and Lutify,2006)

In the field of brain hemisphericity Sperry (1975), Bracken(1979), Lim, Lilian (2000), Szirony (2009),Rosihan (2010),Erin Michille Oliver (2012)conducted studies to see the effect of brain hemisphericity upon various aspects such as intelligence ,problem solving ability etc. While Horak (2012) ,Marthu(2014), Chua Yan Piaw(2014)examined the relationship of brain hemisphericity with intelligence, creativity and academic achievement of addscnt students was assessed through dominance could not find a single study in which mental ability of brain hemisphere and that too in an Indian scenario. hence, the researcher decided to study brain hemisphere dominance and learning among senior secondary school students relation to their mental ability.

Objective of the Study:

“To study the difference in the mental ability of right,left and integrated hemisphere of senior secondary school students”.

Significance of the study:

The importance of this study lies in the knowledge regarding the difference in the mental ability of left-brained ,right brained ,integrated brained students of secondary school is necessary to compare the brain hemisphericity dominance of right, left or integrated brained structure. The result of this study can also be used by parents while guiding their spouse regarding choice of subjects as per their brain hemisphericity. Variables of interest:- their specification in the present study,there exist one dependent variable i.e, mental ability and one independent variable i.e, brain hemisphericity (or hemispheric dominance)

Operational Definitions:

In the present study,mental ability is considered as general intelligence of a person without taking cognizance of his/her verbal fluency, and

cultural climate.Hemisphericity is the cerebral dominance of an individual in retaining and processing modes of Information in his own style of learning and thinking (Venkatratanam,1989).

On the basis of the review of concerned literature, and keeping in view the specification of the dependent\ and independent variables to be incorporated in this study,the following hypothesis is formed“mental ability of senior secondary school students will differ significantly on the basis of their brain hemisphere dominance”

Tools:

Independent variable measures:

Brain hemisphere dominance. For measuring brain hemisphericity dominance SOLAT SCALE by D.Venkatraman(1994) was used.The reliability for left,right and integrated hemisphere were found to be .89, .65 and .71 respectively. The validity was found to be .678.

Dependent variable measures:

The mental ability of the selected subjects was assessed by Culture Fair Test (Revised Hindi Edition,1980). The concrete validity of the test was found to be 0.69.while the reliability co-efficient reported was 0.85. To fulfill the objectives of the present study, 800 senior secondary school students were randomly selected

from different schools of Durg District of Chhatisgarh state.

After explaining the objectives of the research work, a good report was established with each selected individual subject. First of all, SOLAT Scale by D.Venkatraman was administered. This was followed by CULTURE FAIR TEST.After obtaining the responses of all cases, the scoring for each variable was done as per the instruction given in author’s manual.The obtained data was further analysed by using relevant statistical tools as prescribed below.

Analysis and interpretation:

To verify the hypothesis i.e. “mental ability of senior secondary students will differ significantly on the basis of their hemisphere dominance.”, ‘t’ test was used.the obtained result of

the statistical analysis in presented in the table given below.comparision of mental ability between students with right,left and integrated brain hemisphere dominance.

Group	Mean	S.D.	M.D	"t
Right Brain Hemisphere dominant(N=232)	32.47	4.74	0.67	1.58(NS)
Left Brain Hemisphere Dominant(N=367)	33.09	5.52		
Right Brain Hemisphere dominant(N=232) Integrated Brain Hemisphere Dominant (N=201)	32.42	4.74	3.24	6.97**
Left Brain Hemisphere s Dominant(N=367)	33.09	5.52		
Integrated Brain Hemisphere(N=201)	35.67	4.94	5.52	5.70**

** - Significant at .01 level. NS-Not Significa

From the analysis of entries reported in the above table,it is evident that the mental abilities of student exhibiting dominant right brain hemisphere (M=32.42) and dominant left brain hemisphere (33.09) did not differ statistically. The reported t=1.58,was found to be statistically insignificant.

The mental ability of students with integrated brain hemisphere (M=35.67) was found to be significantly higher as compared to mental ability of students with dominant right brain hemisphere (M=32.42). The reported t=6.97, confirm this finding that the difference between these two group is statistically significant at .01 level.

From the analysis of data,it can be inferred that mental ability of students with integrated brain hemisphere is significantly better than the student with dominant left and right brain hemisphere but no significant difference was observed in mental ability of students with dominant right and left brain hemisphere. In view of this find-

ings, differential hypothesis H₁ is partially accepted.

On the basis of the above mentioned discussion, it can be concluded that brain hemisphere dominance plays a big part in mental ability of the students. Students with integrated brain hemisphere dominance have superior mental ability as compared to students with left and right hemisphere dominance. People who access their whole brain flex and flow, they have both sets of beautiful gifts. McCarthy, 1993.

Educational and social implications.

The results of the present study will be helpful for educators to evaluate mental ability of the students in the light of brains hemisphere. The results have educational as well as social implication in regard to making a curriculum which fulfils the need of the students on the basis of their brain hemisphere dominance which in turn will be beneficial for our society as an future generation will be much more learned due to this educational approach.

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