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EFFECT OF BRAIN BASED LEARNING STRATEGIES ON ACHIEVEMENT AMONG ADOLESCENTS

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ABSTRACT

Learning, therefore, provides a key to the structure of our personality and behavior. An individual starts learning immediately after his birth or in a strict sense even earlier in the womb of the mother. The ability to learn is possessed by humans and animals. Human learning may occur as part of education, personal development or training. Learning is a relatively enduring change in behavior which is a function of prior behavior usually called practice (Melvin & Mark, 1971). Quality education is a crucial issue which revolves around the availability and quality of infrastructure, support services and instructional time in the school teacher characteristics and teacher motivation, pre-service and in service education of teacher's curriculum and teaching learning materials etc. Alton Lee (2003) suggested that quality education provides sufficient and effective opportunity to learn. Variety of classroom activities adopted by the teachers make the learning programme interesting, encouraging and memorable through active participation of the students in learning process.

KEYWORDS:Brain Based Learning Strategies, personality and behavior,

Human learning.

INTRODUCTION:

Brain Based education is the purposeful engagement of strategies that signifies how our brain works in the context of education.

(Jensen, 2005)

Brain Based Learning is a comprehensive approach to instruction based on how current research in neuroscience suggests our brain learns naturally.

(Spears and Wilson, 2008)

The Brain Based learning movement is based upon advancements in technology, which have permitted researchers to analyze the brain with greater precision than in generations

prior to the development of high performance computers.

(Withers, 2010)

Caine and Caine (1994) identified Twelve Core Principles of Brain Based Learning:

(i)The brain can perform several activities at once, it is a parallel processor.

(ii)Learning engages the entire physiology of the learner.

(iii)The search for meaning is inborn or innate.

(iv)Patterning facilitates the search for meaning.

(v)Emotions have a critical role in patterning.

(vi)The brain processes parts and whole simultaneously.

(vii)Attention and peripheral perception are important parts of learning.

(viii)Learning involves conscious and unconscious



processes.

(ix) The brain features two types of memory i.e. spatial and rote.

(x) Facts imbedded in spatial memory are best remembered and understood.

(xi) Challenge enhances learning and threat inhibits it.

(xii) All brains are unique.

All of the principles have been important contributors to improve teaching and implementing change. Many teachers have changed their classroom environments in an effort to make them brain friendly. The effects of threat on learning have caused many teachers to rethink the way they motivate, discipline and interact with their students. Teachers realize that they can control the threat they pose to their student, so they try to minimize it. Poole (1997) identified threats from environmental factors outside the classroom, such as poverty, family violence and abuse. He contends that these factors have a powerful negative effect on children's thinking. Resource people in the schools may be able to minimize the threat to children, posed by environmental factors. Some teachers are employing innovative strategies. Brain Based Learning, like most theories, is not without critics. Some think that it is just a fad, that it does not work and that it has nothing new to offer while some think that Brain Based Learning works as an important change agent in their lives. Brain Based Learning helps the learner to attain knowledge from depth and helps to retain that knowledge for a longer period which in turn helps to achieve better result in academics.

The word achievement means the end gains or level of success attained by an individual or group on the completion of the task whether it is academic, manual, personal or social. Academic or Scholastic Achievement means an attained level at which the student is functioning in school tasks such as Hindi or Mathematics or Science as measured by school marks or grades earned. AA is defined as the attained ability or degree of competence in school tasks, usually measured by standardized tests or expressed in age or grade units based on norms derived from a wide sampling of pupil's performance. In other words, it means an attained level at which the students performing in school subjects such as Social Studies, Mathematics, Science etc. which is measured by school marks (Roe, 1960).

FACTORS AFFECTING ACADEMIC ACHIEVEMENT

Mushtaq and Khan (2012) have discussed the following factors which affect academic achievement (academic performance) in their article entitled "Factors affecting Academic Performance" published in Global Journal of Management and Business Research;

1. Students' performance: Galither (2006) and Darling (2005) used GPA to measure students' performance because their main focus was on the students' performance for a particular semester. Some other researchers used test results or previous year result since they are studying performance of the particular subject or year (Hijazi and Naqvi, 2006).

2. Communication: Many researchers have been discussed the different factors that affect the students' academic performance in their research. There are two types of factors that affect the students' academic performance. These are Internal and External classroom factors which strongly affect the students' performance. Internal classroom factors involve class schedule, class size, class test results etc. whereas external classroom factors include extra co-curricular activities, family problems etc. research studies showed that students' performance depends on many factors such as learning facilities, gender and age differences etc. that can affect the students' performance. Harb and El Shaarawi (2006) found that the most important factor with the positive effect on students' performance is students' competence. If the students have strong communication skills and have strong grip on their language in which they speak, it increases the performance of the students. The performance of the students is affected by communication skills, it is possible to see communication as a variable which may be positively related to performance of the students in open learning. A major distinction of this study from previous studies is that it focuses on open learning (Abdullah AL- Mutairi, 2011).

3. Learning Facilities: Students' performance is significantly correlated with satisfaction with academic environment and the facilities of library, computer laboratory etc. in the institution. The students who are actively engage in the learning process are observed to have a positive correlation with CGP. A study effort from

student and the proper use of the facilities provided by the institution to the student is a good match between students' learning style and are positively affect the students' performance.

4. Proper Guidance: Students' academic accomplishments and activities, perceptions of their coping strategies and positive attributions and background characteristics (i.e. family income, parents' level of education, guidance from parents etc.) were indirectly related to their composite scores, through academic achievement in high school (Noble, 2006). The students face a lot of problems in developing positive study attitudes and study habits. Guidance is one of the factor through which a student can improve his study attitudes and study habits and is directly proportional to academic achievement. The students who are properly guided by their parents have performed well in the exams. The guidance from the parents and teachers indirectly affect the performance of the students(Hussain, 2006).

5. Family Stress: Socio Economic factors like attendance in the class, family income, parents education etc. also affect the performance of the students (Raychaudhary et. al., 2010). Academic stress of graduate student will be enhanced if the optimal health related barriers are low (Kernan, Bogart and Wheat, 2011).

REVIEW OF RELATED LITERATURE

Davis (2004) studied the use of Brain Based Learning to Increase fourth Grade Students' Academic Achievement in Science and investigated that with the implementation of Brain Based Learning students displayed appropriate behavior during learning science and displayed a positive attitude towards learning science. There was significant improvement in students' achievement, behavior and self esteem.

Tufekci and Demirel (2009) tested BBL method's impacts on university students' achievement, their retention and attitude towards the course. In this study, achievement and attitude scale was score averages of the experimental and control group students, studying at Technology and Design Teacher Education Department were compared and semi constructed interviews were carried out with the experimental group students. After trained them for fourteen weeks, the experimental group students got higher scores for the higher level learning after experiment, proving the evidence for the retention. Their attitude towards the course also changed positively. The students stated that the content was presented in a meaningful way and their emotions were valued in a rich learning environment organized according to their preferences.

Mc Namee (2011) studied the impact of Brain Based Instructions on reading achievement in a second grade classroom with an objective to determine if students who participated in literature unit based on brain research would have improved reading achievement as measured by SSSRDA. An experimental group of 25 second grade students participated in the Brain Based Literature unit, where as the control group of 19 second grade students participated in traditional teaching practices. After the State Standards Reading Diagnostic Assessment (SSSRDA) was administered as the pre test, the experimental group participated in the 12 week intervention while the control group received traditional reading instruction. The SSSRDA was again administered as the post test and it was found out that students who participated in Literature Unit based on brain research improved reading achievement as measured by SSSRDA.

NEED AND SIGNIFICANCE OF THE STUDY

This study was to be conducted to impart quality education to adolescents by involving Brain Based Learning Strategies so that students will be able to attain good result in academics and will be able to apply gained knowledge in practical life.

DELIMITATION OF THE STUDY

- (i) This study was limited to the students who were studying in eleventh class of a school which is affiliated to C.B.S.E. Board, New Delhi.
- (ii) This sample of this study was fifty students of eleventh.
- (iii) This study was limited to judge the effect of Brain Based learning Strategies on Achievement.
- (iv) The duration of this study was 20 days.

OBJECTIVES OF THE STUDY

- (i) To conduct Achievement Test developed by Dr Gakhar and Dr Gulati, 2004.
 (ii) To compare the effect of Brain Based Learning Strategies and Traditional Learning Method on Achievement of the adolescents.

HYPOTHESIS OF THE STUDY

There is no significant difference between the mean gain scores of Motivation of the students of control group and of experimental group.

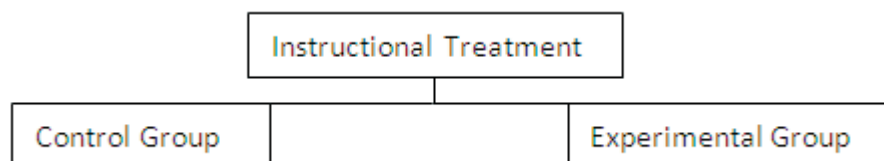
Tools Used

Achievement Test developed by Dr Gakhar and Dr Gulati, 2004

Statistical Techniques Used

t-ratio was employed to find out significant difference between mean gain scores of control group and experimental group of the students.

Design of the Study



METHOD OF THE STUDY

This study was conducted by dividing fifty students of eleventh class into two groups i.e. control group and experimental group. Control group was taught on the basis of Traditional Technique of Learning and Experimental Group was taught on the basis of Brain Based Learning Strategies to assess the effect of Brain Based Learning Strategies to improve the performance of learners in academics. The research was carried out in Mount Carmel School, Chandigarh. 50 students of 10+1 Commerce of this school were participated in the study. The pre/post test control group research model was used in this study. The data obtained in the study were analyzed by the computer program SPSS 15.0.

RESULT

Variables	Mean	Standard Deviation	Std. Error of Mean	t-value	df	Sig. (2-tailed)
AT1	20.5600	5.33916				
AT2	19.8800	4.71098				
AT1-AT2			1.39967	0.486	24	0.631

Critical Value: t-value 2.80 at 0.01 level and 2.06 at 0.05 level of significance

In the above table AT1 represents mean gain scores of achievement of control group students and AT2 represents mean gain scores of achievement of experimental group students. The t-value represents that there is a significant difference between the mean gain scores of Achievement of the students of control group and of experimental group and hence the hypotheses rejected.

CONCLUSION

Thus, it was concluded that Brain Based Learning Techniques help the learner to score better in academics and help to retain knowledge for longer period. Brain Based Learning Techniques help the learner to

apply the gained information in practical field which in return help to motivate him.

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