

“Effectiveness of **Brain Based learning Strategies** on Enhancement of Life Skills among primary school students with internal and external Locus of Control.”

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Introduction of Brain Based Learning

The biggest challenge before the country today in the field of education is not only education expansion and universalisation of education but to improve the overall quality of education. Quality of education is possible only if students remain active in classroom throughout the teaching process. For this, we should apply those techniques in our teaching process which should be according to the interests of the pupils. It means that teaching learning process should be pupil centered rather than teacher centered. To many, the term “Brain Based Learning” sounds redundant. Isn’t all learning and teaching brain based? Advocates of Brain Based teaching insist that there is a difference between “Brain Compatible” education and “Brain Antagonistic” teaching practices and methods which can actually prevent learning.

In his book, **Human Brain and Human Learning (1983) Leslie Hart** argues that teaching without an awareness of how the brain learns is like designing a glove with no sense of what a hand look like—Its shape, how it moves. Hart pushes this analogy even further in order to drive home his primary point if classrooms are to be places of learning then “the organ of learning” the brain must be understood and accommodated.

“**Brain Based education** is the purposeful engagement of strategies that apply to how the brain works in the context of education. **Eric Jensen (2005)**.”

According to Andrea Spears and Leslie Wilson (2008) Brain Based Learning is a comprehensive approach to instructions based on how current research in neuroscience suggests our brain learns naturally. “**Brain Based Learning** is a comprehensive approach to learning based on Neuroscience”. **Jensen (June 12,2008)**

Life Skills

The term life skills refers to a large group of psycho-social and interpersonal skills which can help people to make decisions , communicate effectively and develop coping and self stress management skills that may help them to lead a healthy and productive life. Life skills may be directed toward personal actions and facilitate improvement in the quality of life and general well being.

United Nations Educational, Scientific and Cultural Organization (UNESCO) (2001) considers the life skill as person’s ability to maintain a state of mental well being and to demonstrate the same in adaptive and positive behavior while interacting with others or his/her environment.

United Nations International Children's Emergency Fund (UNICEF) (2002) defines life skill as a behavioral change or behavioral development approach assigned to address a balance of three areas: knowledge, attitude and skills.”

Locus of Control

A person's locus of control is the perception of the extent to which he or she is in control of the outcome of the events in life. Outcomes can be seen as internally controllable by personal efforts or skills or as externally controlled by chance or outside forces.

The extent to which a person believes that he can control what happens to him is referred to as a belief in internal control of reinforcement. A belief that one is controlled by luck fate or powerful others, is referred to as a belief in external control of reinforcement.

Locus of Control is related to the extent to which the child is self motivated, directed or controlled or the extent to which the environment (luck, chance etc.) influence his behavior. **Locus of Control** is a measure of person's perception of determinants of reinforcement he perceives. If a person believes that event is contingent upon his own behavior or his own relatively permanent characteristics, he has belief in internal control. But he belief that reinforcement is not due to his actions and so is contingent upon luck, fate, chance or as under the control of powerful others, the individual has a belief in external control.

Locus of Control refers to an individual personal belief that the events which occur in life are either a result of personal control and effort and outside forces such as fate and luck, perception of positive and negative events as being consequences of one's own action and thereby under own personal control is known as Internal **Locus of Control**. It contrast external **Locus of Control** refers to the perception of positive or negative events being unrelated to one's own behavior and thereby beyond personal control.

People with external **locus of Control** are generally more apt to be stressed and suffer groom depression as they are more aware of work situation and life strains. In nut shell, those with an external **Locus of Control** tend to take personal responsibility for their behavior and those with an external **Locus of Control** tend to take very little personal responsibility for their life and their behavior. In short, children with an external **Locus of Control** have tendency to blame others for their problems. For example: adolescents with strong internal **Locus of Control** believe that their grades are determined by their abilities and efforts. These students believe “the more I study, the better grades I get”. They change their study strategies as the discover deficiencies. They raise their expectations if they succeed and they worry when they think that they have no control over their assignments in contrast, adolescents with external **Locus of Control** believe that their grades are result of good or bad luck and hence are less likely to work hard for high grades. This is obvious in internal and external terms of achievement motivation.

The concept of Locus of Control was developed by **Julian Rotter** in the **1960's**. He originally named this concept as Locus of control of reinforcement. **Rotter** actually bridged the gap between behavioral and cognitive psychology. He believed that behavior was greatly guided by the use of reinforcement. These punishments and rewards in turn shaped the way people interpreted the results of their own actions.

According to Rotter (1966) Locus of Control is that which identifies the extent to which a person perceives that events in her life are contingent upon her own behavior or her own characteristics. **According to Oxford dictionary (2005) of psychology first Indian edition** Locus of Control is a cognitive style or personality trait characteristics which is generalized expectancy about the relationship between behavior and subsequent occurrence of reinforcement:

In the form of reward and punishment, people with internal Locus of Control tend to expect reinforcements.

To be the consequences of their own efforts or behavior whereas people with external Locus of Control expect them to be the consequences of chance, luck, fate or the actions of powerful others.

Studies related to Brain Based Learning

According to **Jensen (2008)** Brain Based Learning was related to teaching strategies and principles from an understanding of how the brain functions and learning with the brain in mind. The latest research on Brain Based Learning theory drew from multiple disciplines such as Chemistry, Biology, Genetics and Neurology (**Jensen, 2008**). Brain Based Education considered how the brain learns best and encouraged educators to take this information into consideration as they planned teaching strategies with the goal of more effectively motivating all types of learners. **Lock and Prigge (2002)** developed a system of steps for creating a Brain Based Learning Environment that was commonly implemented. According to **Demir (2011)** however, student motivation comes from multiple sources. The primary determining factor was the student's perception. Brain Based teaching strategies effectively created student success which in turn created a positive student perception. It was also noted by **Weiner (2010)** that not all Brain Based Motivation is positive. Depending on a learner's perspective, one student failed a test and was motivated to study harder whereas another student failed the same test and gave up. Brain Based Learning practices and perceptions of all types of learners so that negative perceptions and low expectancy were thwarted.

Studies related to Life Skills

Waltmire (1999) in a study entitled "**Kaleidoscope of opportunity**" :teaching Life Skills reported that training of Life Skill to the students between the ages of 17 and 19 had led to decrease in the distress/despair among them. This research reported the significant difference between the self-perception of traditional and non-traditional college student's personal Life Skill.

Rooth (2000) conducted an investigation of the enhanced relationship between participants in Life Skill Courses, human needs, resources and environment. The research concluded

these are advantages of intervention grounded in experimental learning, at those participants in Life Skill courses developed enhanced self perceptions and were more empowered.

Powny, Janet and Lowden (2000) investigated in their study Young People's Life Skill and the future, about what Scottish and English young people consider important. Life Skill is how they believe, they develop them and how necessary they see them to their future lives. More than 200 16-21 years old examined photographs of events related to basic life tasks, family, close relationships, work or school and leisure activities. They considered communication and interpersonal skills as most important and essential Life Skill. In the same research, young people believed these skills were also those that employers consider essential. They consider family work, friends and school as the main influences on skill development.

UGC(University Grant commission) (2006) promoted the importance of Life Skill education and its relation with mental health during an "international workshop on Life Skill education for Youth Development" at Madras in 2006. Workshop concluded that Life Skills are essentially those abilities that help adolescents to promote mental well being and competence in them as they face the realities of life. Participants from USA, UK, France, Germany, Finland, Greece, Scotland, Norway and Sweden have agreed that developing Life Skills helps adolescents to translate knowledge, attitude and values into healthy behavior that improve their lives in general such as decision making, career planning and forming positive relationships.

Zimmerman, Daniele (2010) identified in the study entitled Project Based Learning for Life skill Building in 12th grade Social Studies classrooms. A case study that Project Based Learning in 12th grade social studies classrooms contributes to the development of Life Skill for high school seniors in this advanced and globalized time. A qualitative approach to gathering research, using the interview format was conducted with three teachers who agreed to participate in the study. The teachers had created a unique Problem Based Learning program in their high school classrooms. The focus of their work was to document the success in teaching Life Skills to high school students with a goal of preparing them for college, jobs and life after secondary education. It was found that the Project Based Learning method was important for skill building for life, and that fundamental changes are needed for education and instruction.

Studies related to Locus of Control

Davis and Palladian (2000) revealed that students with Internal Locus of Control tend to perform better on academic tests than the students with External Locus of Control.

Lynch and Cole (2002) researched on elementary school students and found that enabling parents tended to have children with an External Locus of Control and that having an External versus Internal Locus of Control was a statistically valid predictor of academic stress.

Statement of the Problem

Effectiveness of Brain Based Learning Strategies on Enhancement of Life Skills among Primary School Students with internal and external Locus of Control.”

Objectives of the study

To develop Lesson plans based on Brain Based Learning strategies.

To compare the mean gain scores of life skills of male and female students in experimental group and control group.

To compare the mean gain scores of life skills of male and female students in experimental group and control group with internal and external Locus of Control.

Research Questions

Are the mean gain scores of life skills of male and female students in experimental group and control group different?

Are the mean gain scores of life skills of male and female students in experimental group and control group with internal and external Locus of different?

Method and Procedure

Experimental method of research endeavors to assess the effectiveness of Brain Based Learning Strategies on enhancement of Life Skills of primary class students with internal and external LOC.

Research Design

2X2X2 factorial design was used in the present study. To study the main effects of Traditional Group and Experimental group based on Brain Based Learning on the dependent variables of Life skill.

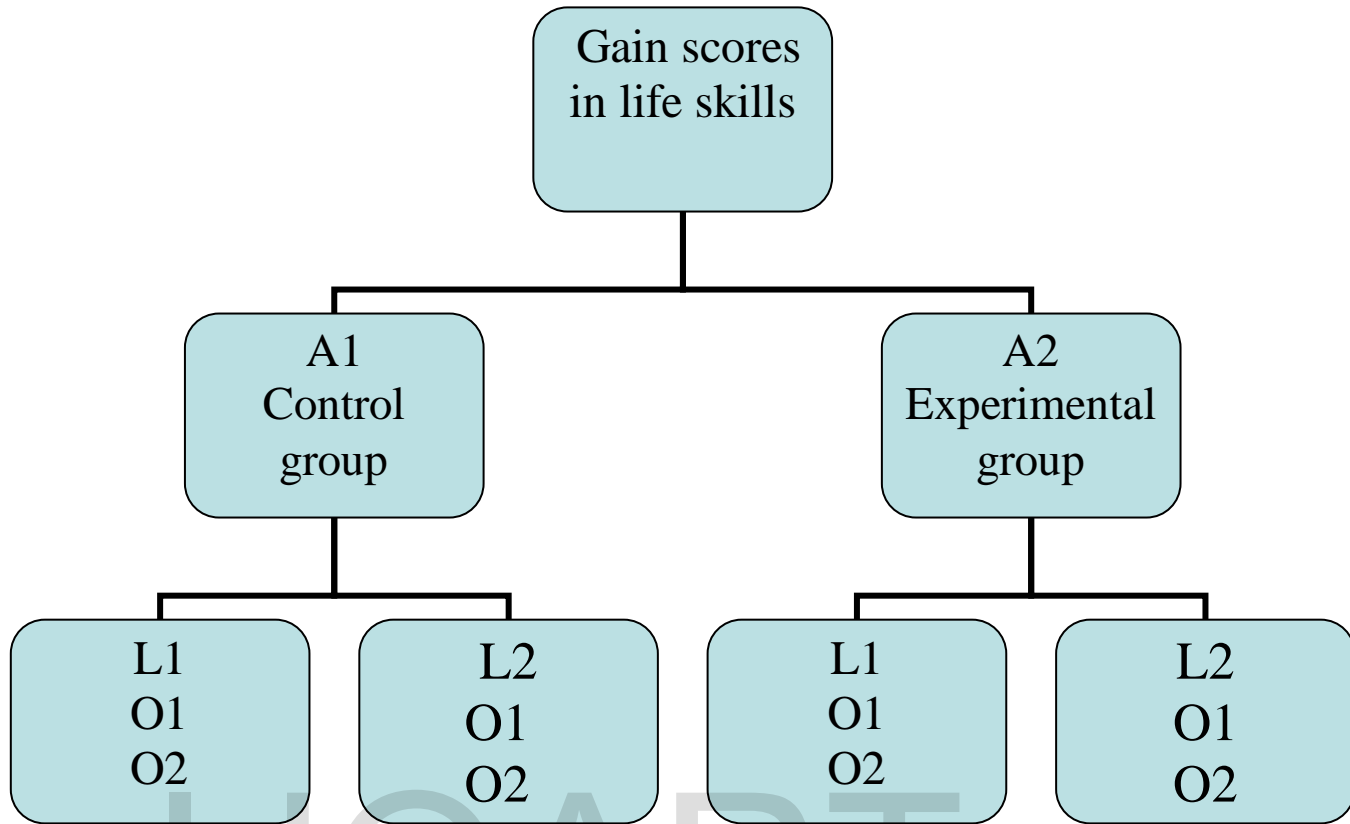


Figure: Diagrammatic Layout of the 2X2X2 factorial design.L1,L2 are internal LOC and external LOC groups.O1,O2 are life skills of decision making and critical thinking.

Analysis of data:

Source of variation	df	SS	MSS	F-ratio	Level of Significance
Treatment(T)	1	46118.042	46118.042	352.861	S*
Locus of Contro(L)	1	2507.321	2507.321	19.184	S**
TxL	1	18.676	18.676	0.143	NS
Error between	116	15160.890	130.697	-	-
Categories of objectives(O)	1	1630.991	1630.991	33.679	S**
TXO	1	220.551	220.551	4.554	NS
LXO	1	143.763	143.763	2.969	NS
TXLXO	1	152.275	152.275	3.144	NS
Error within	116	5617.581	48.427	-	-

Summary of 2x2x2 ANOVA for mean gain scores on Environmental Awareness

S** - SIGNIFICANT AT 0.01 LEVEL OF CONFIDENCE

S* - SIGNIFICANT AT 0.05 LEVEL OF CONFIDENCE

NS* - NOT SIGNIFICANTS

Conclusion

The mean gain scores of life skills of male and female students in experimental group and control group are significantly different?

The experimental group taught by Brain based learning strategies performed significantly better in Life-skills in comparison to control group, taught by traditional learning strategies.

The mean gain scores of life skills of male and female students in experimental group and control group with internal and external Locus of Control are significantly different?

The male and female with internal LOC performed significantly better than male and female with external LOC.

Educational Implications

A brain compatible teacher teaches with the brain in mind. This teacher understands the principles and uses strategies in a purposeful way. This path is all about an educator who understands the reasoning behind their teaching. It is also one who stays constantly updated through continuous professional development. Evidence suggests that stress is a significant factor in creativity, memory, behavior and learning. Teachers who purposely manage stress factors (purposefully increase/decrease stress) in class are likely to experience a positive classroom environment.

There are many ways to decrease stress in the classroom, such as integrating stretching exercises, incorporating recess, teaching coping skills and utilizing physical education.

“Brain Based Teaching is all about smarter, more purposeful teaching that can reach a greater number of students”

Techniques of Brain Based Learning

There are three brain friendly techniques associated in brain based learning, which are based on ability and **limitations** of brain.

- **Relaxed Alertness:** One can concentrate why they are relaxed so to maximize the potential. Alertness can be enhanced by eliminating fear but maintaining a challenging environment.
- **Orchestrated Immersion:** Creating a learning environment that will completely involve the learner in the subject. For example: To experience the weightlessness in space, experience weightlessness by Scuba diving.

- **Active Processing:** Allowing the students to process the information to remember according to their ability. This is accomplished by teaching the same material with several approaches.

Methods of Brain Based Learning

- **Project Based Learning:** It can inspire the best of high performance teamwork or it can be devolve into unfocussed chaos. It is a dynamic approach in which students explore real world problems and challenges. With this type of active and engaged learning, students are inspired to obtain a deeper knowledge of the subjects they are studying.
- **Integrated Studies:** It combines curriculum from two or more disciplines, allowing students to see how ideas are connected. Teaching in such a contextual manner promotes collaboration, critical thinking and knowledge retention.
- **Social and Emotional Learning:** It's not enough to simply fill student's brain with facts. Educators must also help children to develop the skills to manage their emotions, resolve conflict non violently and make responsible decisions.
- **Student Motivation:** Motivation plays a very vital role in a student's life. It helps an individual in arousing an interest towards their desired goals and is governed by certain behavior. Students can be motivated by allowing them to enter into any classroom.

By Eric Jensen (1996)

Brain based education is actually a “no brainer”. Here's a simple but essential premises; the brain is intimately involved in, and connected with, everything educators and students do at school. Any disconnect is a recipe for frustration and potential disaster. **Brain based education is best understood in three words:**

- Engagement
- Strategies
- Principles

You must engage your learners and do it with strategies that are based on real science.

Harvard university has both master's and doctoral degrees in this field, known as the “Mind, Brain and Education” Program. There's also peer reviewed scientific journal on Brain Based Education, which features research reports, conceptual papers, reviews, debates etc.

There are “**Macro strategies**” and “**Micro strategies**”. The Micro strategies are very situation specific. For example: when you are giving directions, only give one a time because the brain needs time to process the location, the action and the qualities of action. I provide these in our actual workshops because they require demonstrations and context to maximize the understanding and transfer. Here we’ll focus on Macro strategies. These are the “Biggies” that reap huge rewards. But you’ll need to use customize them for your situation. They all are achievement boosters. (**Jensen, 1996, p-61**)

to influence, regulate and repair brain based disorders has been amazing. Innovations suggest that special education students may be able to improve far more than we earlier thought.

It Impacts **five major areas**:

- ***Instructional Strategies principles*** include:
 - Integration of mind-body learning.
 - Strong learning choices offered.
 - Emphasis on novelty, ritual and challenge.s
 - Greater use of natural memory.
 - More immediate learner feedback.
 - Multi-path strategies.
 - Emphasis on non-conscious processing.
 - Learner constructed meaning.
- ***The Environmental Principles*** include:
 - Create a secure and safe environment with an absence of threat.
 - Use of collaborative and trusting relationship.
 - Make it physically comfortable.
 - Rich, real life and multi sensory.
 - Greater time flexibility.
- ***Curriculum Principles*** are:
 - Integrated and multidisciplinary thematic content.
 - More relevant and real life learning.
 - Greater learner choice.
 - Longer time on fewer and more complex topics.
 - Process mastery as part of learning goals.
- ***Assessment Principles*** include:
 - Demonstration of solid content mastery.
 - Defense of personal biases.
 - Demonstration of the inter disciplinary relationships.
 - Relevance of mental models.
 - Revelation personal relevance or when appropriate, of local, national or global relevance.
 - Specific “how-to-strategies”.

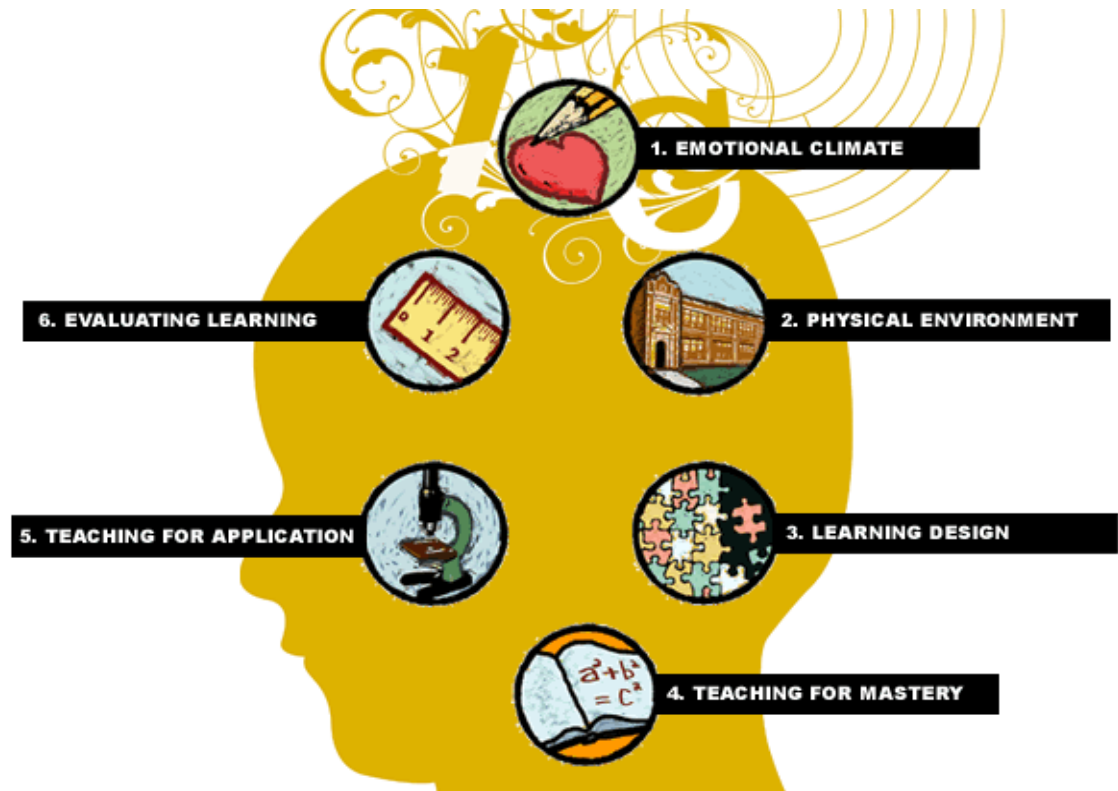
- Observable behavior changes.
- ***Organizational Structure Principles*** include:
 - Clarity and unity of purpose.
 - Learning as the primary priority.
 - Institutionalized and self corrected system.
 - Environment of safety and dialogue.
 - Support of staff and learner for personal and professional growth development.
 - A Bottom-up driven and non- bureaucratic management method system-wide-buy-in of the methodology of Brain Based Learning.

The Brain Targeted Teaching Model

By: Dr. Mariale Hardiman, Ed. D , 2003.

This is designed to provide teachers with a format for using research in the Neurosciences as well as research based effective instructional practices to guide them in planning, implementing and assessing a sound program of instruction. The model also assists administrators, supervisors and professionals supporting instructions as they guide teachers in implementing research based effective teaching strategies.

This model presents six stages or “Brain Targets” of the teaching and learning process and describes brain research that supports each stage. While each brain target is presented separately, the components are interrelated. For example: Brain Target describes the importance of establishing a positive emotional climate to foster high levels of learning; these strategies are applied throughout the entire model. At the same time, evaluating learning, Brain Target six, is an integral part of each component or target of the model.



Brain Target –One

The emotional climate for learning

Neuroscientists have recently described the intricate interactions between the emotional and cognitive brain systems. Research has shown that the brain's limbic system, located just above the brain stem at the base of the brain, is responsible for our emotional responses.

Brain Target –Two

The Physical Learning environment

While Brain Targeted one focuses on establishing a positive emotional climate, Brain –Target two fosters the careful planning of the physical learning environment.

In the Brain Targeted Teaching Model, teachers carefully plan the physical learning environment by deliberately planning for novelty, order and beauty within each learning unit.

Brain Target –Three

Designing the learning experience

Brain Target Three encourages teachers to design the learning experience in a way that is compatible with the brain's natural learning systems

Brain Target –Four

Mastery of skills, content and concepts

The next stage of Brain Targeted Teaching Model is to engage students in activities that will enable them to demonstrate mastery of skills, content and concepts. Brain – Target Four promotes mastery of learning goals and objectives by planning multiple activities to activate the brain's memory systems.

Brain Target Four of the Brain Targeted Teaching Model encourages teachers to plan for repeated rehearsals of content, skills and concepts so that the information becomes part of student's long term memory systems. Such repetition would be terribly boring for students (and for teachers too) if the same activities were presented multiple times in the same way.

Brain Target –Five

Extending and applying knowledge

The acquisition of knowledge is only the beginning of a sound instructional program. Brain research supports what educators know to be the hall mark of effective instructions life long learning but occurs when students are able to apply content, skills and processes to tasks that require them to engage in higher order thinking and problem solving skills.

Brain Target –Six

Evaluating learning

While **Brain six** is the **last stage** of the Brain Targeted Teaching Model, each stage of the model includes evaluation activities. The goal of evaluation is to provide the students with relevant feedback about their performance so that the students can adjust learning habits and the teacher can make sound instructional decisions.

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