

# **BRAIN-BASED LEARNING:-QUITE INDISPENSABLE FOR OPTIMAL LEARNING**

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## ***Abstract***

*We are all great natural learners. Failing children and failing schools are an indication of a faulty system, not a faulty brain. Creating an organization around the way the brain naturally learns best may be the simplest and most critical educational reform ever initiated. Piaget by his theory initiated, that for acquiring learning it is essential that experiences or material presented to the learner must somewhat new and moderately challenging to initiate the phenomenon of accommodation. Everyday learners worldwide are developing new skills and knowledge based on a brain- compatible model of instruction. But it is an instructional model that integrates some simple discoveries about what facilitates accelerated learning, enrichment, and reorganization of our cognitive system. This paper is devoted to the exploration of these discoveries and its applications to the classroom or training environment and strategies for implementing brain- based learning.*

**Keywords:** Learning, learner, brain, environment

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## **Introduction**

“You can lead a horse to water, but you can’t make it drink” this old age saying reflects today’s educationist and teacher that their responsibility in leading the horse to water with enough punishment and rewards, you can get any behaviour you wish but How can we make the horse thirsty so that it will want to drink from the trough? This reflects the thinking of every teacher. The approach of brain- based model to discover the learner’s natural impediments and built- in- motivators to emerge natural consequence as desired behaviour. The brain is trying to learn, in order to survive. This is why is makes so much sense to design your approach so that it is centered on the needs of the learner.

## **What is Brain- Based Learning?**

The brain is the most complex organ we possess. It contains about one hundred billion (100,000,000,000) cells (Eric Jensen 2005). Scientist has verified that like our thumbprint. Our brain is unique in the world. The variability of a learner’s brain reflects many factors, including genetic and environmental influences. Since all learning is connected to the brain but brain- based learning approach is learning in accordance with the way the brain is naturally designed to learn. Although a brain- based learning approach doesn’t provide a recipe to follow, it does encourage considering the nature of the brain in our decision- making. By the knowledge about the brain, we can make better decisions, and we can reach more learners, more often, with less misses. In Toto it is learning with the brain in mind.

Brain- based learning is a way of thinking about the learning process. It is not a panacea; nor is it the solution to all of our problems. It is not a programme, dogma, or recipe for teachers and it is not a trend or gimmick. It is however, a set of principles; and a base of knowledge and suits upon which we can make better decisions about the learning process.

## **Enriching the brain**

Arnold Scheibel (1994) the director of Brain Research Institute at University of California, Los Angeles says that “unfamiliar activities are the brains best friend. The fact that the brain is so stimulated by novelty; once a new or new novel stimuli is reintroduced, the reticular formation of brain gets alerted once again and the brain is stimulated to grow first, to

get the stimulation, the stimulus must be new. An old stimulus just won't do. It must be novel. Second, the stimulus must be challenging. Routine efforts do little for the brain's growth. Third, the stimulus must be coherent and meaningful. Random input will not enrich the brain. Fourth, the learning has to take place over time. How much time depends on the extent of the neural changes, but the only changes that happen instantly are stimulus response learning. And finally, there must be a way for the brain to learn from the challenging novel stimuli (Eric Jensen 2005)

### **Enhancing cognition**

Cognitive enrichment possibilities are ever inherent in our daily decisions- from the foods we eat and people we socialize with to the amount of physical and mental exercise and sleep we get. The work of Richard Bandler (1988) reveals that our brain has three criteria which must be fulfilled in order for it to know that it knows something- also called the self-convincer state. Although the criteria vary from person to person, in general, the brain needs the following three forms of verification for learning in order to truly believe it.

**Modality:** The learning must be reinforced in the learner's dependent modality either, visual,, auditory or kinesthetic.

**Frequency:** The new learning must get reinforced with repetition. The necessary repetition varies from one to twenty times depending on the individuals.

**Duration:** The learning must be validated for a length of time anywhere from two seconds to several days depending again upon the individual.

Once a learner has experienced learning in their preferred modality, the right number of times, and for the right length of time, they will feel that it is now true, when this happens, we believe it in our gut until then, its only data, with little meaning.

### **Physical Activity Boosts Learning**

Neurophysiologist Carla Hannaford says that the vestibular (inner ear) and cerebellar system (motor activity) is the first sensory system to mature. The interaction between the two systems helps us keep our balance, translate thinking into action, and coordinate body movements. Typical playground games and motions like swimming, rolling, and jumping

stimulate this system “when we don’t move and activate the vestibular system, we are not taking information from the environment. Exercise does several things for the brain. First, it enhances circulation so that individual neurons can get more oxygen and nutrients. Second, it may spur the production of a hormone NGF (nerve growth factor) that enhances brain function. Third, gross motor repetitive movements can stimulate the production of dopamine, a mood- enhancing neurotransmitter. One of the most powerful reasons to engage learners in purposeful play is biological. All mammals engage in play. The play is a way to learn behaviours in a non-threatening way. When human engage in play, it allows us to learn motor, emotional, social, and cognitive skills in an environment that can sustain a less- than- perfect learning performance (Thayer 1989).

### **Music with a purpose**

Music can have a mind- altering effect on humans. Music is an essential aspect of human life; and our responses to it may even be hard-wired into our brain. Music elicits emotional responses, receptive or aggressive states, and stimulates the limbic system. Consider a 1987 National music Educators Conference report that cites students taking music courses scored 20 to 40 points higher on standardized college entrance exams. And, a college entrance examination board study (Educational Testing Services 1999) suggests that students who took four or more years of music classes scored higher on both verbal and math tests. Don Campbell, author of *The Mozart Effect* (1997), summarizes how music lowers stress. It impacts our heart rate, influences the brain’s chemicals, and creates a receptive state of mind. Accelerated Learning pioneer Georgi Lozanou (1979, 1991) says that classical and romantic are better for introducing new information. Music can engage the brain, a combination of words and music can dramatically increase the result.

Music enhances the learning environment by calming our nervous system. Recent studies are suggesting that music can also improve memory, cognition, concentration and creativity. There are numerous ways to incorporate music purposefully. Simply playing baroque in the background on low volume can evoke a relaxed and optimal learning state. Depending on the type of music played, you can also use it to help learners cool down, warm up, relax, mark an important moment or occasion, or to get energized. Music should be used purposefully and judiciously for best result. Too much can saturate the listener, reducing its effectiveness. Other

types of sound are beneficial, as well. Even clapping games, singing, nature sounds, and simple rhythms alter physiological states and create more receptivity for learning.

### **Environment for enhancing cognition**

Our brain's attention priority is to wavelengths of color, light, darkness, motion, form and depth. Thus, these elements can provide a basis for attracting our learners. Colour is a powerful medium and one that is generally underestimated. Colour has such an impact on our brain because it's a part of spectrum of electromagnetic radiation. If we are highly anxious and stressed, red can trigger more aggressiveness. But if you are relaxed, it can trigger engagement and positive emotions. We may be underutilizing the value of our brain's visual system. The more visuals we can incorporate, the better. Visuals are an important key to remembering the content. Seasons can impact learning; we can improve learning by improving the lighting during the darker winter months. We are creating learning environments that are too rigid. We must give our learners in option to sit where it feels best for them and provide learners with choice, and be responsive to their temperature needs.

### **Planning with Brain in Mind**

Planning is more important today than ever as there is more to learn. Brain-based lesson planning does not follow a template-mainly because the basic premise of brain-based learning is that every brain is unique, so a 'one size fits all' approach does not work. Learning different things requires different approaches for different people depending on variables such as prior learning, experience, preferred modalities and the type of skill being taught. "If brain-based pedagogy could be summed up in one sentence, it would be, Knowledge should be socially created" (Slavkin, 2004). Erlauer (2003) suggests that "Collaborative learning provides the brain with the means to explore new information, typically in a problem-solving situation". Collaborative communities in schools can take many forms. Students can form peer groups and assist each other's learning (Wolfe, 2001). When students can share their own knowledge and skills with others, not only do the "receivers" gain because they learn something new, but the student who is acting as the teacher will solidify his or her knowledge teaching it to others. (Erlauer, 2003) Students and teachers can also work collaboratively to make sense of information. This helps create an environment of relaxed alertness to increase student comfort and ability to focus in class (Caine et al., 2005; Pool, 1997).

## **Brain Based Reform**

Based on brain and learning, what we do think as the hallmarks of brain based learning? Asking ourselves question will help us embody the learning we have done so far. Most school staff emphasize outcome-based standards based on grade level. Many educational systems are increasing the accountability load on teachers, without enhancing their training, resource and support. Classrooms today are dramatically less homogeneous than they were just a couple of decades ago. To achieve better results in learner achievement, we need to focus on the factors we have the most control over: environment, environment, environment! Brain based learning environment maintain brain-friendly practices most of time.

Most of us underestimate the capacity of our learners. Consider the innate potential of human brain: and then reevaluate your expectations. Keep it in mind that our learners are capable beyond our wildest dreams. So provide a climate where every learner is respected and affirmed with complex, multisensory immersion environment. Give students and opportunity to express themselves and interact with each other. Encourage learning with music, mind maps, role plays, journals, model building movement, community projects, theater and art. Provide learners with global overview as well as step-by-step instructions. Explicit strategies such as answer keys, peer editing, debriefing, videotaping to provide valuable student feedback. When multiple source of feedback is encouraged, students not only learn more and more accurately but their intrinsic motivation is deepened as well.

### **To sum up...**

Brain based learning considers how the brain learn best. The brain does not learn ‘on demand’ by a school’s rigid inflexible schedule. It has its own rhythms. Brain-compatible learning means weaving math, movement geography, social skills, role-playing, science and physical education together. Our traditional system does not teach learners to think. There are a host of resources on the market now that provide ‘mental workouts’ of many types – from train teasers to crossword puzzles. Make sure that you are not just teaching or training but that you are ‘growing better brains’. Reduce lecture time, seat work, and other rote activities. Challenge students’ brains; and be sure to give them the resources to meet the challenge.

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