10. Brain gymnastics

10.1 HISTORY OF THE BRAIN GYYM: Brain Gym is a program involving a sequence of activities believed to improve academic performance. The 26 Brain Gym activities are claimed to foster eye teaming, spatial and listening skills, hand-eye coordination, and whole-body flexibility, and so activate the brain for optimal storage and retrieval of information. Numerous books have been written describing research and case studies in which use of the Brain Gym activities has benefited specific populations, including children recovering from burn injuries and those diagnosed with autism.[1] The Brain Gym activities have been incorporated into many educational, sports, business, and seniors programs throughout the world. They are also widely used in British state schools.

The program has been criticised as pseudoscience for the lack of references in some of the theories used in the 1994 *Brain Gym: Teacher's Edition* (revised in 2010) and for the absence of peer review research that performing the activities has a direct effect on academic performance.

History

What became the Brain Gym program began with Paul Dennison's work as a public school teacher and reading specialist in the 1960s, researching more effective ways to help children and adults with learning difficulties. At that time, he worked in East Los Angeles with the innovative educator Dr. Constance Amsden, Director of the Malabar Reading Project for Mexican-American Students, which focused on the development of individual sensory modalities (visual, auditory, and tactile skills) for reading instruction.

In the early 1970s, Dennison observed that challenged readers at his learning centers had less access to whole-body movement and postural awareness than more adept readers. He realized that some learners used one-sided motions (such as handwriting) at the expense of the non-dominant side, rather than in coordination with it. Seeing that even successful classroom learners were often tense from using primarily one-sided motions, he sought simple ways to teach both coordination and differentiation of movement in the classroom.

In 1975, at the University of Southern California, Paul received the Phi Delta Kappa award for Outstanding Research; he was granted a Doctorate in Education for his research in beginning reading achievement and its relationship to cognitive development and silent speech (thinking) skills. His familiarity with research from behavioral optometry and sensorimotor training that showed the effects of movement upon learning " . . . led him to extrapolate this information into quick, simple, task-specific movements."

In the early 1980s, Dr. Dennison began a teaching and writing partnership with Gail Hargrove, later to become Gail Dennison. They call their field of study, which they founded during this period, "Educational Kinesiology" (Edu-K). They define Edu-K as "learning through movement".

The Dennisons say that Edu-K draws from the educational philosophy of Jean Piaget and the sensory-integration works of educators Maria Montessori, Anna Jean Ayres and pediatricianArnold Gesell, as well as the work of movement pioneers F.M. Alexander and Moshe Feldenkrais. In its emphasis on active learning, Edu-K further embodies elements from the educational philosophy of John Holt (*How Children Fail*), Jerome Bruner (the spiral curriculum), and Carl Rogers (student-centered learning). Since the mid 1980s, the Dennisons have also drawn from the work of Howard Gardner and Thomas Armstrong on multiple intelligences (Visioncircles Teacher's manual, 1986) and, more recently, Armstrong's work on neurodiversity.

Some of the specific Brain Gym activities that the program uses have been, according to the Brain Gym International website, developed from Paul Dennison's "knowledge of the relationship of movement to perception, and the impact of these on fine motor and academic skills." Others are adapted from movements he learned during his training as a marathon runner, his study of vision training (learned from developmental optometrists with whom he shared referrals in the 1960s), his study of Jin Shin Jitsu (a form of acupressure), and his study of Touch for Health (a form of kinesiology developed for laypeople by chiropractor John Thie).

The Dennisons present their program under its current name in their books, e.g. *Brain Gym: Simple Activities for Whole Brain Learning* (1986), *Brain Gym and Me: Reclaiming the Pleasure of Learning* (2006) and *Brain Gym: Teacher's Edition*, 1987, 1996, and 2010.

The Brain Gym activities are now used in more than 87 countries; the Edu-K works have been translated into more than 40 languages

Premises

In the early 1970s, Paul Dennison hypothesized that when readers avoid the bilateral midline they inhibit part of their visual field. He observed such learners as reading one-word-at-a-time (not sentences), lacking comprehension, and experiencing visual stress. He used simple movements (later named the Brain Gym(R) activities) to teach alignment of the head, torso, and visual field for an ergonomic use of tools.[14] He further theorized that the small motor skills (e.g., eye and hand motion) involving precision for reading and writing are best developed within a context of whole body (interlimb) and bi-manual coordination. He has

since expanded this premise to say that all learning begins with the internalization of physical skills, such as eye-teaming, eye-hand or bi-manual coordination, and interpretation of spatial directions, to name a few. Under stress, the integrating elements of movement are lost; ". . . some individuals *try* too hard and 'switch off' the brain-integration mechanisms necessary for complete learning[10]" The repetition of specific bilateral, contralateral, and other activities is said to "promote efficient communication among the many nerve cells and functional centers located throughout the brain and sensory motor system."[15] There are 26 Brain Gym activities, which are designed to integrate body and mind in order to improve "concentration, memory, reading, writing, organizing, listening, physical coordination, and more."

Educational Kinesiology draws on basic anatomy in teaching that movement occurs along three planes of motion, each plane describing the axis along which an action is performed. These three planes intersect to create three movement dimensions. Brain function is defined in terms of three dimensions: laterality being the ability to co-ordinate the left and right sides of the body, focus being the ability to co-ordinate the front and back of the body, and centering being the ability to co-ordinate the top and bottom of the body.

The Brain Gym activities are said to work by giving people an experience of moving in order to interconnect the body in these three dimensions. According to Brain Gym, people can use the three dimensions to learn more easily; for example, they can use their lateral movement (left to right co-ordination) to improve their ability to read and think at the same time.[16] As another example, the Belly Breathing activity can be used as a reminder to breathe instead of holding the breath during focused mental activity or physical exertion. The activity teaches how to expand the rib cage front to back, left to right, and top to bottom. They claim that when breathing is shallow, lifting only the scalenes, oxygen to the brain is limited.

10.2 Brain gym exercises: Brain Gym® exercises are exercises designed to help the brain function better during the learning process. As such, you can think of Brain Gym® exercises as part of the overall theory of multiple intelligences. These exercises are based on the idea that simple physical exercise helps blood flow to the brain and can help improve the learning process by making sure the brain stays alert. Students can use these simple exercises on their own, and teachers can use them in class to help keep energy levels up throughout the day.

These simple exercises are based on the copyrighted work of Paul E. Dennison, Ph.D., and Gail E. Dennison. Brain Gym® is a registered trademark of Brain

Gym® International . I first encountered Brain Gym in "Smart Moves," a best selling book written by Carla Hannaford, Ph.D. Dr. Hannaford states that our bodies are very much a part of all our learning, and learning is not an isolated "brain" function. Every nerve and cell is a network contributing to our intelligence and our learning capability. Many educators have found this work quite helpful in improving overall concentration in class. Introduced here, you will find four basic "Brain Gym" exercises which implement the ideas developed in "Smart Moves" and can be used quickly in any classroom.

There are a series of movements called PACE. They are surprisingly simple, but very effective! Everyone has a unique PACE and these activities will help both teacher and student become positive, active, clear and energetic for learning. For colorful, fun PACE and Brain Gym® supplies contact the Edu-Kinesthetics on-line bookstore at Braingym.com .

Drink Water

As Carla Hannaford says, "Water comprises more of the brain (with estimates of 90%) than of any other organ of the body." Having students drink some water before and during class can help "grease the wheel". Drinking water is very important before any stressful situation - tests! - as we tend to perspire under stress, and de-hydration can effect our concentration negatively.

"Brain Buttons"

This exercise helps improve blood flow to the brain to "switch on" the entire brain before a lesson begins. The increased blood flow helps improve concentration skills required for reading, writing, etc.

- Put one hand so that there is as wide a space as possible between the thumb and index finger.
- Place your index and thumb into the slight indentations below the collar bone on each side of the sternum. Press lightly in a pulsing manner.
- At the same time put the other hand over the navel area of the stomach. Gently press on these points for about 2 minutes.

- **"Cross Crawl"** This exercise helps coordinate right and left brain by exercising the information flow between the two hemispheres. It is useful for spelling, writing, listening, reading and comprehension.

- Stand or sit. Put the right hand across the body to the left knee as you raise it, and then do the same thing for the left hand on the right knee just as if you were marching.
- Just do this either sitting or standing for about 2 minutes.

"Hook Ups"

This works well for nerves before a test or special event such as making a speech. Any situation which will cause nervousness calls for a few "hook ups" to calm the mind and improve concentration.

- Stand or sit. Cross the right leg over the left at the ankles.
- Take your right wrist and cross it over the left wrist and link up the fingers so that the right wrist is on top.
- Bend the elbows out and gently turn the fingers in towards the body until they rest on the sternum (breast bone) in the center of the chest. Stay in this position.
- Keep the ankles crossed and the wrists crossed and then breathe evenly in this position for a few minutes. You will be noticeably calmer after that time.

More "Whole Brain" Techniques and Activities

Have you had any experience using "whole brain", NLP, Suggestopedia, Mind Maps or the like? Would you like to know more? Join the discussion in the forum.

Using Music in the Classroom

Six years ago researchers reported that people scored better on a standard IQ test after listening to Mozart. You would be surprised at how much music can also help English learners.

The Brain: An overview

A visual explanation of the different parts of the brain, how they work and an example ESL EFL exercise employing the specific area.

Using Colored Pens

The use of colored pens to help the right brain remember patterns. Each time you use the pen it reinforces the learning process.

Helpful Drawing Hints

"A picture paints a thousand words" - Easy techniques to make quick sketches that

will help any artistically challenged teacher - like myself! - use drawings on the board to encourage and stimulate class discussions.

Suggestopedia: Lesson Plan

Introduction and lesson plan to a "concert" using the suggestopedia approach to effective/affective learning.