# TO LEARN OR NOT TO LEARN?
# - "WHY?" IS THE QUESTION!

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**(*an introduction to the Learning Enhancement Acupressure Programme LEAP*)**

## Introduction to Specific Learning Difficulties:

All learning dysfunctions, hence difficulty in learning, have their root in how the brain functions. The brain is designed to learn. From the time we are born until we die, learning is as natural as breathing, and certainly as important since our very survival depends on it. Initially it is our physical survival that depends on learning "Look both ways before crossing the road". Later, in technological societies, it is our economic survival and success that are dependent upon what we learned in our educational and training environments. Since learning is so natural, why is it that some of us learn easily and others learn only with difficulty? Why do some of us have a difficult time learning traditional skills such as reading, spelling, and mathematics?

It may be said that it is all a matter of access: what brain functions you can access, how well you can access the functions available, and what you have to access. A person with low innate intelligence, but full access to all brain functions may find learning difficult. On the other hand, a person of high innate intelligence, but with problems accessing specific brain functions may also experience difficulty learning, at least in some areas. The brain functions much like water running down a hill; it will always take the most direct processing route available. Unimpeded, water will always run straight down the hill, but if its path is blocked, it will seek the next most direct route down the hill. If that path is also blocked, it will again seek the next most direct route, etc. Each time it is blocked, the pathway becomes longer and less efficient at getting the water down the hill.

The same is true of processing in the brain. If all functions are equally accessible, the brain will always choose the simplest, most direct functions to do the processing required. However, there are many ways of performing all mental tasks and the brain will just choose the next most efficient route for processing, if the most direct function is not available/accessible for whatever reason. If the next most efficient pathway is also blocked, the brain will then route the processing to other functions that are accessible, even if these functions are a far less efficient way of processing that information. If many brain functions are not accessible, the processing path may become very long and inefficient creating difficulties in doing tasks dependent upon these processes. Each time the processing path becomes longer and less efficient, the level of "stress" encountered using that pathway increases. When the level of "stress" reaches a high enough level, we may opt out of situations that require us to access these functions altogether.

Different learning tasks require access to different functions and/or combinations of functions in the brain. The brain can be divided into several functional regions, each of which processes information in different and often unique ways. The two brain regions recognised most commonly by people are the right and left cerebral hemispheres. When the brain is removed from the skull, it appears to have two distinct "halves" because of the deep longitudinal fissure separating the cerebral hemispheres (Fig. 1). In the popular press these are often referred to as the "right and left brains" because of their anatomical distinctness and the differences in the way each hemisphere processes information.

These two hemispheres are not separate, however, as they are connected along most of their length at the bottom of the fissure by a structure called the Corpus Callosum (Fig. 1). Neurologically, the Corpus Callosum is approximately 200 million nerve fibres running between the two hemispheres. It functions much like a telephone exchange allowing a two way flow of communication between the hemispheres. Whenever the hemispheres are required to "work together" to produce an integrated function, the Corpus Callosum is the site of that integration.

Each cerebral hemisphere carries out a number of different functions, and each processes information in a very different way from its partner. It is as if each side of the brain is a specialised organ of thought, with the right hemisphere possessing a set of functions that complement those of the left hemisphere and vice versa (See Table 1). The right hemisphere functions in most people are global or Gestalt in nature dealing with the whole and recognition of overall patterns, while the left hemisphere functions in most people deal with logically sequenced analysis of the parts of the whole. It is because of these differences in functions and processing that the right hemisphere is sometimes called the "Right" or "Gestalt" brain and the left hemisphere the "Left" or "Logic" brain.

| **GESTALT (typically right) HEMISPHERE** | **LOGIC (typically left) HEMISPHERE** |
|---|---|
| **FUNCTIONS:** | **FUNCTIONS:** |
| Spatial Orientation | Temporal (time) |
| Body Awareness | Mathematics |
| Facial Recognition | Rhythm |
| Music Recognition (melody) | Language (verbal) |
| Pre-verbal & Non-verbal (gestural) | Assigning Meaning to Symbols |
| Interpreting Symbols | |
| Creative/Lateral Thinking (daydreaming) | |
| **PROCESSES INFORMATION:** | **PROCESSES INFORMATION:** |
| Globally, Holistically as a Gestalt | Linearly, Logically and Analytically |
| Simultaneously | Sequentially |
| Subjectively | Objectively (with reference to "Facts) |
| Intuitively | |
| "Knowing" based on intuition | |

**Table 1**. ***Functions of and Information Processing in the Right and Left Hemispheres in most people***.

While the popular press may refer to it as right and left brain thinking, it is not the physical hemispheres housing these functions that is important, but rather the location of the Gestalt and Logic functions themselves. In some individuals these cerebral functions may be transposed with the Gestalt functions physically located in the left hemisphere and the Logic functions physically located in the right hemisphere. By the definition of the popular press, these people would have their "right brain" in their "left brain", which doesn't make any sense. They just happen to have their Gestalt functions located in their left hemisphere and their Logic functions located in their right hemisphere. About 3-5% of people, however, display transposed Logic and Gestalt functions with 95-97% of people having their Logic functions in their left and their Gestalt functions in their right hemispheres. Because the dominant hand tends to be opposite the Logic hemisphere, most people are right-handed, while many people with transposed functions (e.g. Logic right) tend to be left-handed or ambidextrous.

It must be emphatically stated here that both hemisphere participate all the time at many levels in the "various thought processes." **The way we learn is a result of the degree of integration of the two hemispheres**, with each hemisphere contributing its own special capacities to all cognitive activities. The contrasting, yet complementary, contributions of each hemisphere are clearly demonstrated during complex mental activities such as reading as illustrated in the following quote from Levy: "When a person reads a story, the right hemisphere may play a special role in decoding visual information, maintaining an integrated story structure, appreciate humour and emotional content, deriving meaning from past associations, and understanding metaphor. At the same time, the left hemisphere plays a special role in understanding syntax, translating written words into their phonetic representations and deriving meaning from complex relationships among word concepts and syntax." [(1)]

Although there is no activity in which only one hemisphere is involved, or to which one hemisphere makes the only contribution, functions predominantly in one cerebral hemisphere may be all that are required for many simple cognitive tasks. There is both psychological and physiological evidence that the relative degree of activation of functions in the two hemispheres varies depending upon the nature of the task being performed. When doing simple arithmetic tasks such as counting or adding 1 + 1, the Logic functions will be activated with little Gestalt activity required. A predominantly Gestalt task, on the other, such as matching patterns, will require little Logic involvement. The more complex the learning task becomes, the greater the required degree of activation and integration of functions in both hemispheres.

Different learning tasks, therefore, require access to different types of functions, and different degrees of integration of these functions. Some of these functions are located predominantly in the Gestalt/right brain, while others are located predominantly in the Logic/left brain. The more complex learning tasks like reading and spelling require access not only to functions in both hemispheres, but the integration and simultaneous processing of information in both hemispheres. Therefore, if you can access all brain functions in both cerebral hemispheres with equal facility and can integrate all these functions well, you will probably find learning easy!

However, if for any reason you can not access certain brain functions or have difficulty integrating the functions accessed, you may well have difficulty performing tasks dependent upon or involving those specific brain functions. From our perspective, **all specific learning difficulties result from some lack of access to specific functions or the inability to effectively integrate these functions** (assuming there are no organic problems). Depending upon how well a person can access certain Gestalt and/or Logic functions, he will demonstrate one of the patterns of specific learning difficulties briefly discussed below.

## Major Patterns of Specific Learning Difficulties Based on How Well Logic and Gestalt Functions are Accessed or Integrated:

## 1. Gestalt Dominance in Mental Processing (Attention Deficit Disorder):

The most commonly observed specific learning difficulty is Gestalt dominance in processing information or Attention Deficit Disorder (A.D.D.). People with this pattern of learning dysfunction have good access to most Gestalt functions, but only poor access to Logic functions, with Gestalt processing the predominate mode used for performing all tasks. Because of this Gestalt dominance in processing information, the normal balance provided by complementary Logic functions is largely absent. These people, therefore, often display the following symptoms:

**tendency to be impulsive**.
**little appreciation of the connection between "cause" and "effect".** I want to do "X", so I do it, never thinking, "What will happen if I do"
**difficulty budgeting time.** Because of this and difficulty concentrating, projects are often left incomplete and organisational skills are poor.
**difficulty concentrating.** "Concentration is merely paying attention over time. If there is no "Sense of Time", attention can not be paid over it?
**difficulty spelling.** Generally spelling is phonetic by putting letters together until it "sounds" like the word.
**difficulty with mathematics.** Difficulty remembering times tables and/or under standing mathematical concepts.
**poor reading comprehension.** Reading may be fluent, but there is often poor comprehension of what was read.
**difficulty assigning meaning to words and symbols.** Interpretation of symbols (Gestalt) may be accessible, but there is difficulty assigning meaning to the words/symbols interpreted (Logic).
**good coordination.** Often well coordinated or even gifted athletically.
Remember the Gestalt functions control body awareness and orientation in space.

It is precisely because of the above symptoms that people displaying Gestalt-dominant processing are found to be "attention deficit". Attention Deficit Disorder is assessed by having a person perform a series of sequential tasks, any one of which the person can do easily. However, people suffering from A.D.D. are unlikely to complete the series of tasks, not because they can not perform them, but rather, because they lose concentration or are easily distracted.

## 2. Logic Dominance in Mental Processing (Dyslexia):

Much less common than Gestalt dominance is Logic dominance in decision-making processing. People who access their Gestalt functions poorly, but have good access to Logic functions are the true dyslexics" by standard psychological definition. That is, they display the following four behavioural symptoms:

**cannot spell** or do so in some phonetic form by putting letters together to approximate the "sound" of the word.
**have great difficulty reading.** Usually stumble over words, misread words, or just cannot "sound" words out. However, comprehension of what was read is often excellent.
**display dysrhythmia.** An inability to clap or tap a tune.
**poor coordination.** Are physically uncoordinated or"clumsy".

In addition, these people are usually good at mathematics at least to the level of algebra, display good concentration, and follow sequential directions well. However, they may have to be taught things that other people learn unconsciously.

## 3. Limited Access to both Gestalt and Logic Functions (Severe Problems):

The next most common type of learning difficulty, after Attention Deficit Disorder or Gestalt Dominance, is poor or limited access to both Gestalt and Logic functions. This pattern is usually associated with a great deal of confusion in cerebral processing and creates the greatest learning difficulties. If a person has good access to either Gestalt or Logic, but poor access to the opposite side functions, he or she can at least compensate sate with the functions he or she does access well. If there are major deficits in both Gestalt and Logic functions, then the ability of the brain to compensate for these deficits is extremely limited. The following behavioural symptoms result from this pat tern of access:

**language delay.** Language development is often extremely delayed for age. For instance, an eight year old child may only recognise 3 letters and 2 numbers.
**reading very delayed for age.** Often difficulty with recognising words, or word recognition is a real struggle.
**spelling very delayed for age.** Often cannot spell words with more than 3 or 4 letters.
**difficulty understanding numbers, including basic arithmetic**. Often having difficulties with learning to count, concepts of adding and subtraction, knowing the days of the week, etc.
**no concentration or focus.** Appear "away with the fairies".
**person appears confused/lazy or just plain "slow mentally".** Often fairly apathetic and lethargic with no zest for life.

We generally see these people as children early on. Because of the extreme nature of their learning dysfunctions, these people have normally been dismal failures in school and have departed the academic scene by their early teenage years.

## 4. Poor Integration of Gestalt and Logic Functions:

The least common pattern of learning difficulty is among people who have good access to both Gestalt and Logic functions, but can only "integrate" these functions poorly if at all. The lack of integration of Gestalt and Logic functions often limits the use of the functions that they can access giving rise to learning dysfunctions similar to people having poor access to one or the other hemispheres. The most common symptoms are:

**reading difficulties.** Often so stressful to read that it can only be done for a few minutes at a time, or is avoided altogether.

**spelling is totally phonetic.** Words spelled like they "sound".

**difficulty with higher mathematics (e.g. algebra)** even though arithmetic may have been
perfected.

For these people, school is often an extremely frustrating experience. They can usually perform all tasks well except those requiring good integrated function. Since integration of Gestalt and Logic functions are required for reading and spelling, but integrated functions are very stressful for these people to perform, these essential academic tasks are likely to be avoided.

## The True Nature of Specific Learning Difficulties:

Our philosophy regarding Specific Learning Difficulties is that **most learning difficulties result from the degree of access each person has to specific brain functions and how well these functions can be integrated.** If a person can access all brain functions in both cerebral hemispheres with equal facility and can integrate all these functions, he or she performs well In all areas of learning. However, if for any reason he or she can not access certain specific brain functions, he or she will have difficulty performing the tasks dependent upon, or involving, those specific brain functions.

Standard psychological testing to evaluate specific learning problems rely on determining which types of cerebral functions and processes can be accessed, and how well these functions are accessed. Standardised intelligence tests such as the Wechsler Intelligence Scale Test are a carefully devised series of tasks which are divided into two groups: Verbal sub-tests and Performance sub-tests. The Verbal sub-tests are tasks which require access to predominantly Logic functions. Some of the Verbal sub-tests require access to only a few Logic functions, while others require access to both Logic and Gestalt functions at the same time, but with the lead functions contributed by the Logic brain. Likewise, some of the Performance sub tests are tasks which require access to only Gestalt functions, while others require integrated functions with a Gestalt "lead".

The score on each sub-test depends largely upon how well a person can access the specific functions required to perform that sub-test. Sub-tests In which a person scores poorly indicate which types of functions are difficult to access. Difficulty in accessing specific functions has been correlated with poor performance in certain academic areas.

## Behavioural Aspects of Limited Access to Cerebral Functions and/or Poor Integration of these Functions:

An appreciation of some of the behaviours associated with learning difficulties may be useful at this point. How do people's behaviour reflect their underlying ability to participate in this natural process of learning? In clinical practice we are told about and see the same types of behaviours from people (especially children) who present for treatment of specific learning difficulties. Again and again we see the same behaviours ticked on the Behavioural Evaluation Form filled out for each client when people have certain learning dysfunctions. Why might this be?

Lack of access to specific cerebral functions will almost always have a discernible behavioural corollary. The nature of the functions accessed, or not accessed determine to a large degree how a person behaves. A child that is Gestalt dominant will often be perceived as "emotionally immature because emotional maturity is essentially the ability to modulate and control the expression of emotions based on a logical analysis of circumstances. A well integrated person with Good access to all cerebral functions may "feel" angry (largely a Gestalt experience), but make the rational judgment that "now" is not the appropriate time to express that anger. A Gestalt dominant person, on the other hand, will experience the anger and tend to act on these feelings with little logical consideration of the consequences.

It is our philosophy that people's behaviour reflects the degree of access and integration of their cerebral functions. Poor access to, or integration of, specific brain functions will result in difficulty performing tasks dependent upon these brain functions. Difficulty performing these tasks will almost always generate "stress" when attempting to do these tasks, often resulting in "avoidance behaviours." The extent of the "avoidance behaviours" usually relates to the degree of "stress" generated when attempting to access and integrate the relevant functions.

What is often not appreciated is that people's behaviour tells the truth, if you understand what is being said! When a child says, "I hate Reading, Mathematics, English, etc", what that person is actually saying is, "I cannot access the brain functions I need to do that task easily  The only reason anyone "hates" doing anything, that is enjoyable for most other people, is that he finds that specific task difficult to perform. If a person can read well and easily, reading isn't avoided , but rather sought out because there is just so much to learn and enjoy in books. If, on the other hand, reading is a very demanding and stressful task, people soon develop avoidance mechanisms, for instance labelling reading as "boring." Who wants to do something that is "BORING"

Unfortunately, these avoidance behaviours are often misinterpreted as "just not doing what you are told" or "misbehaviour" plain and simple. The response to these "avoidance behaviours" may be to tell the person to just stop misbehaving and "pick up your game" This only compounds the "stress" of attempting to do these tasks, usually leading to further avoidance behaviours, and exaggerated misbehaviour. Part of what exaggerates the misbehaviour is simply the frustration and anger of NOT being able to perform the assigned task, even when great effort is expended. Imagine how you would feel if you have struggled through your reading, mathematics, English etc. assignments, putting in the best effort you are capable of, only to be told, "Well you're just going to have to try harder!"

From our experience, many of the people having the greatest difficulty with "learning" are often innately very clever. They just cannot access the specific brain functions they need to perform certain tasks. When you talk with these people and listen to the questions they ask, they are often clearly, intelligent people. If a clearly, intelligent person does not read well or spell well, or has great difficulty understanding and doing even simple mathematics, a reasonable assumption is that person just isn't "concentrating", or "paying attention" or "trying hard enough.". Surely, if an intelligent person was "concentrating, paying attention, and trying hard enough", then he or she would be successful at these rather pedestrian tasks, accomplished with ease by even their less clever peers. What is over-looked is that these, intelligent people may indeed be clever and intelligent, but unable to access the relevant brain function, or only able to do so under duress.

Perhaps an analogy here will help demonstrate the above point. If I say to a handy-person, "Do you know how to hammer a nail?", most would answer,"yes". To the question "Will you hammer a nail for me?", they would answer, "Sure, just give me a hammer". However, if their hands were tied to their legs, they may still answer "yes" to the question, "Do you know how to hammer a nail?", because they do know how; but, they would be unable to do so when asked.

If you just ignored their lack of access to hand function (because it is tied up) and said "Come on now, hammer that nail, they may become frustrated and angry because they could hammer that nail if only they could access the function of their tied-up hands.

The difference between this analogy and the above lack of access to brain functions is that they would clearly understand their inability to hammer the nail, and they would likely state, "If you'll just untie my hands, I'll gladly do it for you", letting you know why they can't at this time do what is asked of them, also alleviating their frustration at not being able to do so.

However, with lack of access to specific brain functions, people cannot understand (nor can those around them) why they cannot perform certain tasks dependent upon the specific brain functions not accessed! The individual is unlikely to consciously know why he can't access these specific brain functions, and just becomes "frustrated", which often leads to "anger" and that anger often leads to "inappropriate behaviour."

## LEAP (LEARNING ENHANCEMENT ADVANCED PROGRAMME) - LEARNING CORRECTION PROGRAMME:

The program is centred around a powerful brain integration technique initially developed by Richard Utt, Founder and President of the International Institute of Applied Physiology in Tucson Arizona, and Dr. Charles Krebs, co-founder of Melbourne Applied Physiology with Susan McCrossin.

This brain integration technique opens up access to both Gestalt and Logic functions and removes blocks to integrated function. Further research and development of specific correction techniques by co-founders of Melbourne Applied Physiology, Dr. Charles Krebs (a past research scientist and university lecturer in anatomy and physiology) and psychologist Susan McCrossin, now allow the correction of most specific learning difficulties.

The Basic Learning Correction Program requires twelve to fifteen hours of treatment. This includes an initial assessment that serves as a benchmark against which to evaluate future change, and points out the areas needing the most attention. The next several hours are devoted to Brain Integration which lays the foundation for the specific learning corrections that follow. Much like building a house, there is little sense in putting time and effort into creating a functional structure unless it rests on a solid foundation. The Brain Integration procedure releases stresses in the deep brain centres, including the Limbic System, which control access to and integration of hemisphere functions.

Once the Brain Integration procedures are complete, we then apply specific learning corrections for dysfunctions in reading skills and comprehension, spelling, mathematics, and the whole range of Wechsler Intelligence Scale sub-tests. When all the functional areas have been addressed, low self-esteem and behavioural problems related to the previous learning difficulties are addressed using effective emotional and memory stress release (defusion) techniques. Just because you now can perform a learning task well does not mean that you will. Previous conditioning and memory of "how it was", often shut off our will to give it a go.

All correction techniques used are non-invasive. The techniques are based on the use of muscle monitoring, acupressure, emotional and memory release, and sound and light techniques, together with other left/right brain integration exercises.

A typical **Learning Correction Program** may look like -

**Initial Consultation** (2 hrs) -

- discussion of areas of concern
- detailed assessment to determine the learning strengths and weaknesses
- determination of a treatment plan with an estimate of how many sessions it is likely to take (typically 12x1hr)
- referral for additional treatment if considered necessary

**Subsequent sessions** -

- correction of deep levels of confusion in the nervous system
- establishing a stable foundation of brain integration - even under stress
- increase the access to brain areas or functions identified as problems in the initial consultation
- overcoming self esteem issues and forming positive attitudes to learning

**Reassessment** -

- checking that all the learning functions have been corrected
- giving follow up exercises
- arranging tutoring or a home reinforcement self help programme with parents

**Follow up** -

- 2-3 months after the final consultation, to check on progress and correct any further problems that may have arisen

The basic 12-14 hour program is an estimate based on the median time for treatment as each person's program will vary on the basis of their individual needs. The median time is the length of treatment that occurs most often. Some people with only one or two areas of deficit may take only 10 hours to go through the whole program, while others with many areas of deficit may take far longer.

Children with severe learning problems and major deficits in most areas of function indicated by Low Average, Borderline, or Serious Deficit ranking on standardised tests, may require up twenty to thirty hours of treatment or more. Our experience is that even these children improve significantly in function, but that the rate of improvement is slower than for people with less severe deficits.

At the end of the initial Assessment during the first session, you will be advised of the probable length of treatment required in your specific case, along with any additional structural areas you may find benefit in addressing seperately.

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References:

*1. Levy, J. 1985. Right brain, left brain: Fact and Fiction., Psychology Today.*