

Accelerated learning in a digital information environment

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The buzz phrase, learning how to learn, has been around for a number of years. Over the last decade or so psychologists have begun to discover more of how the brain works, how facts can be rapidly and deeply fixed in long-term memory and how we learn. The teaching method of Accelerated Learning has drawn upon the work of Dr. Georgi Lozanov, a Bulgarian research psychologist and Harvard educator, Dr. Howard Gardner. It also includes studies of Nobel laureates such as neuroscientist Roger Sperry and neurobiologist Gerald Edelman.

SURVIVAL SKILLS

Two skills – fast learning and clear thinking are the key to survival in the 21st Century. These skills produce self reliance; an ability to manage your own learning, to master the volume of information and to see its significance and meaning, and to know how to use the information to design and develop creative products and creative answers to problems.

LOZANOV METHOD

Lozanov constantly advocated that everything in the classroom needed to suggest success. Negative limiting expectations needed to be broken down and positive expectations needed to be built up. Six main principles featured in the classrooms of Lozanov and form the basis for Accelerated Learning classrooms.

1. Remove all negative mental blocks that cramp the natural learning ability. Desuggest the idea that your ability is limited.
2. Relax – information is rapidly and effortlessly absorbed in a relaxed state.
3. Create a mental map of the information you are going to learn.
4. 'Active Concert' – the medium is the message. Music, rhythm, drama, visual stimuli are a part of the learning process.
5. Take a short break. 'Receptive Concert' – subconscious time to absorb the review process involving sound and visual stimuli.
6. Sleep on it followed by 'Activations'- series of games, or puzzles and/or activities devised to review the previous day's work.

(Rose: 1985: 84-86)

This style of teaching is designed to bring about 'learning in the round'. Colin Rose, author of a number of resources on Accelerated Learning, personally experienced a learning episode using the Lozanov method and says " ...every single element of the class is positive – no criticism, just encouragement. It is the sort of supportive atmosphere that a child normally learns in. Everything was focused to ensure effective, stress-free learning. Words, pictures, and sound were all coordinated. Left brain/right brain activity was coordinated. Conscious/subconscious influences were coordinated. The childlike joy of learning was married to the adult's store of prior knowledge. The Lozanov method is holistic learning at a very refined level." (Rose: 1985: 87)

THE BRAIN – a sleeping giant

You have three brains, two brains and one brain.

The three brains consist of the Brain stem or Reptilian brain which carries out basic functions such as breathing, heart beat, sense of territory (flight / fight); the Limbic System or Mammalian brain is the switchboard of your emotions and controls your immune system, sexuality, long term memory; and then there is the Neocortex or Thinking brain which handles seeing, hearing, creating, thinking, talking - all the higher intelligences.

The two brains are the Left brain that focuses on linear, step-by-step, logic, language, number, sequence, analysis and the Right brain which is the creative component that thrives on imagination, daydreaming, capturing the big picture, global concepts, patterns, colour and rhythm.

Lastly, the whole brain carries out functions of receiving through the senses, holding in memory, analysing to form patterns and information processing, outputting in the form of communication and thinking and controlling the mental and physical functions of the body.

What activates the brain and all its functions is chemical/electrical connectivity between neurons. A neuron consists of a cell body from which extends a main fibre called the axon. The axon, which is covered by a fatty coating, terminates either with another neuron cell or with branch like fibres(dendrites) from other brain cells. The junction or gap at which two cells meet is called the synapse. A 'neuronal embrace' involves the release of chemicals (neurotransmitters) which permit electrical activity to flow across the synapse. Current knowledge indicates that there are up to 30 different types of neurotransmitters and that the speed of a 'neuronal embrace' is about 100 metres per second. The average adult human brain consists of approximately 12,000 to 15,000 million nerve cells, which equals potential intelligence. The number of 'neuronal embraces', that is the connections activated by an active brain, equals usable intelligence. Therefore, if we do not use it we can potentially lose it!

Added to the three brains, two brains, one brain and brain cells there are brain waves, which play an active part in the reception and retention of information. The four brain waves are:

Beta – This is the brain wave of your conscious mind; it characterises logical thought, analysis and action. You are at your most active and alert.

Alpha – This is the brain wave that characterises relaxation and meditation; the state of mind during which you daydream and let your imagination run. It is a state of relaxed alertness that facilitates inspiration, fast assimilation of facts and heightened memory.

Theta – This is associated with the early stages of sleep or deep reverie. This ‘twilight zone’ allows your mind to process the day’s events and information. It is when you may experience flashes of inspiration or creativity. Evidence has been gathered to indicate that Rapid Eye Movement (REM), which occurs during this stage of sleep, helps boost memory. In fact, it provides the opportunity to transfer information from short-term memory to long-term memory.

Delta – This brain wave is displayed during deep dreamless sleep.

MULTIPLE INTELLIGENCES

Dr. Howard Gardner defines intelligence as “an ability to solve a problem or fashion a product that is valued in one or more cultural settings.” (Rose: 1997: 37) He believes that intelligence is not fixed and that it can be learned as a set of abilities and skills to apply to any situation at any given time within any given context. When you marshal all of your intelligences you really begin to use the full potential of your brainpower.

Initially, Gardner presented seven distinct intelligences:

Linguistic, Logical-Mathematical, Visual-Spatial, Musical, Bodily-Kinesthetic, Interpersonal(Social) and Intrapersonal. In 1996 Gardner added an eighth intelligence – Naturalistic. There has been further discussion about additional intelligences, but Gardner has resisted the temptation so far.

Other authors, such as Charles Handy, have also identified various forms of intelligence. (Handy: 1998) An important outcome is the acknowledgement that the future will belong to those who make the most of their intellectual capital.

OBJECTIVE OF ACCELERATED LEARNING

“The objective of Accelerated Learning is to:

- a. Actively involve the emotional brain – thereby making things more memorable.
- b. Synchronize left- and right-brain activity.
- c. Mobilize all eight intelligences so that learning is accessible to everyone and the resources of the whole mind are used.

- d. Introduce moments of relaxation to allow consolidation to take place. Although understanding something and memorizing it are different, all learning – to be useful- needs to be stored in the memory.” (Rose: 1997: 43)

The six basic steps of Accelerated Learning are:

- Motivating your mind
- Acquiring the information
- Searching out the meaning
- Triggering the memory
- Exhibiting what you know
- Reflecting on how you have learned.

A crude comparison of the above steps with those of the Information Process is presented in the following table.

INFORMATION PROCESS	ACCELERATED LEARNING
Defining	Motivating your mind Acquiring the information
Locating	
Selecting	Acquiring the information Searching out the meaning
Organising	Triggering the memory
Creating / Sharing	Exhibiting what you know
Evaluating	Reflecting on how you have learned

MOTIVATING YOUR MIND

It is important to approach the learning process in a relaxed manner. Our brain does not function well when it is stressed. It needs to be in Alpha state, that of relaxed alertness. Today there is a great deal of emphasis placed on the multi-sensory, multi-intelligent and interactive nature of the world of multi-media through CD-ROM and the Web. Therefore, it is logical to utilise the visual, auditory and kinesthetic components of the senses to develop a relaxed and resourceful state of mind. For example, SEE yourself confidently tackling a learning task, HEAR the approving comments about your newly developed abilities and FEEL a sense of pride knowing you can master the subject/topic.

The role of music

“Music is the mediator between the life of the senses and the life of the spirit” – Beethoven

Accelerated Learning is characterised by the use of music. A series of experiments on plants has dramatically demonstrated the effect of certain types of music on living things. Mrs. Rettallack of Denver tested the comparative effect of rock music and classical music on vegetable plants, petunias, zinnias and marigolds.

The result:

Rock Music	Classical Music
<ul style="list-style-type: none">• Plants grew abnormally tall, with very small leaves, or remained stunted• Plants leaned away from the source of the rock music• Within two weeks the plants died	<ul style="list-style-type: none">• Plants outgrew control plants• Plants leaned towards the source of the classical music• Some plants literally grew to wrap around the speakers• Plants flourished

(Rose: 1985: 95-96)

The music of Mozart has been described as having the ability to coordinate breathing, cardiovascular rhythm and brain wave rhythm, which presents positive effects on health. Not only does it produce a sense of well being but also stimulates receptivity and perception.

Attitude

If you want to gain altitude in your learning, then you also need to develop attitude. All attitudes are learned attitudes and that is why Lozanov placed great emphasis on removing the limiting beliefs of the learner before commencing the learning process.

Develop a will to succeed. Studies done in neuro linguistics focus on concepts such as inner dialogue, positive affirmations, anchoring a successful experience and reliving with intensity, defining the benefits/advantages and establishing a clear purpose for learning. Passion + vision + action = success!

Within an Accelerated Learning classroom you could:

- take time to explain how the brain works
- explain the different learning styles and complete a quick checklist
- arouse interest by immediate relevance
- visualise the outcome through examples
- give learners a sense of control through the development of class rules
- create a class motto
- 'colour' the environment (music, posters = sound and visual stimuli)
- teach the value of self talk
- generate enjoyment and fun in learning
- make it safe to make mistakes
- foster a 'culture' of success
- include the power of suggestion.

ACQUIRING THE INFORMATION

At this stage it is important for the learner to develop some idea of their preferred sensory / learning style and/or to be given the opportunity to express themselves either through visual, auditory or kinesthetic activities. For example, a visual may develop a learning map, highlight words, develop a chart, and draw diagrams. An auditory may read dramatically, summarise out loud, make an audio recording. A kinesthetic may walk around as they read or listen, make notes, write, learn in groups.

Preferred learning style

There are three ways to find out your preferred learning style. The first is very simplistic but reasonably accurate. It has to do with the way you express yourself; the words you use in speech.

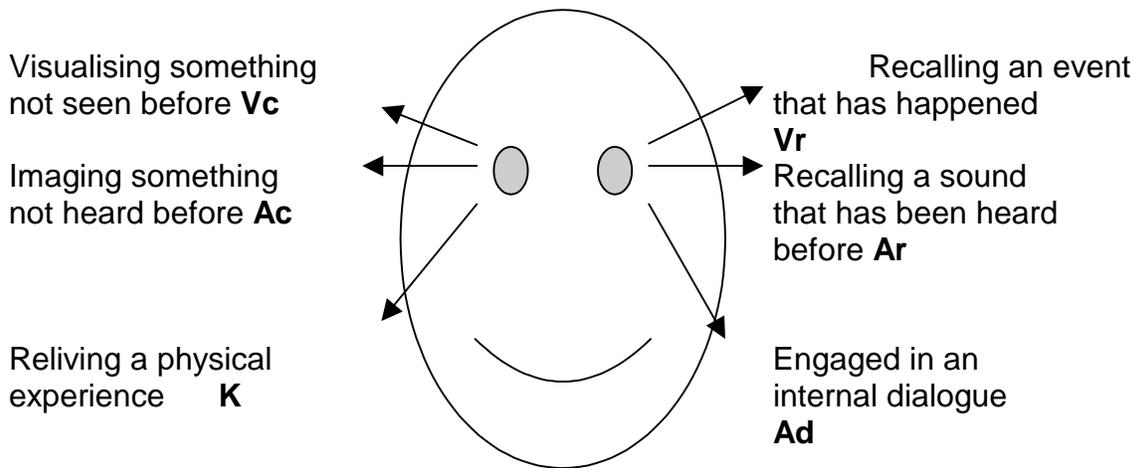
For example:

Visual	Auditory	Kinesthetic
<ul style="list-style-type: none">• I see now• I get the <i>picture</i>• I'm in the <i>dark</i> about...• That <i>looks</i> right to me	<ul style="list-style-type: none">• That <i>sounds</i> right• That <i>rings</i> a bell• Just <i>listen</i> to me• I <i>hear</i> what you say• Something <i>tells</i> me that's the answer	<ul style="list-style-type: none">• That <i>feels</i> right• I can get a <i>handle</i> on that• I'm <i>groping</i> for an answer• Give me a <i>concrete</i> example• I have a <i>firm grip</i> on the subject

By matching the teaching approach with the preferred learning style you are able to communicate more effectively; you 'speak the same language'.

The second is more specific and involves working through a checklist to identify the characteristics, which most represent your personal preferences. The following references will provide you with a checklist – Rose: 1985: 147-149; Rose: 1995: 7-8.

The last is rather fascinating. We all exhibit involuntary clues through eye movement, breathing patterns, muscle tone, vocal tone and gestures. Most attention has been placed on the eye accessing cues. For a normal right-handed person the following eye movements would happen in response to a series of questions.



(O'Connor & McDermont: 1996: 72-76; O'Connor & Seymour: 1990: 35-39; Rose: 1985: 149-153)

Get the big picture

A key approach is to make sure the learner gets an overview of the entire project/task/activity/learning exercise. Ever tried to do a jigsaw without seeing what the picture looks like? Every starting point has a core idea. Once you understand this then you can begin to develop your basic ordering ideas as the framework from which you can sketch out what you know and do not know. By asking questions (who, what, when, where, why, how) you will find the answers have more significance and are more memorable. By continually questioning what you do not know means learning can be endless and infinite.

Chunking

The term 'chunking' has been developed in relation to the neuro linguistic phrase – seven plus or minus two. This is the brains ability to absorb information. Quite a lot of information can be broken into 'chunks' so that we remember. For example, think about how you recall a telephone number or recite the alphabet. You chunk it!! Therefore, acquiring the facts requires us to take one step at a time; we can absorb 7 (+/- 2) new ideas/thoughts and then progress on by chunking the information again. We consciously break down what we are trying to learn into 'bite-size' pieces. By taking in information bit-by-bit we experience a continuous process of small successes.

SEARCHING OUT THE MEANING

This is the stage where intelligences and thinking are put to work. Consciously developing and using your full range of intelligences leads to a deeper level of learning.

Multiple intelligences

The work of Gardner has been presented in many resources. The following references will provide you with a starting point – Rose: 1997; Rose: 1995; Lazear: 1992; Lazear: 1991. The basic premise behind Gardner's multiple intelligences is that it removes the single chance theory of education. Intelligence is not fixed!

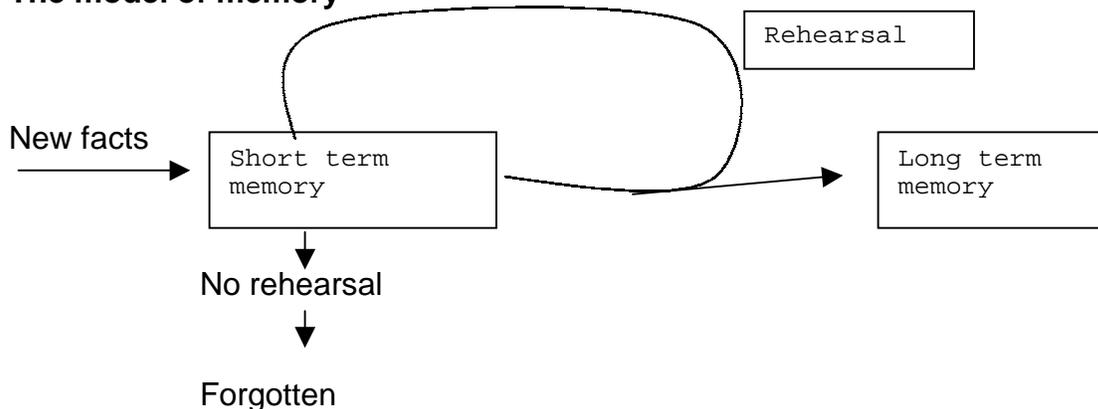
Creative thinking

The work of Edward De Bono also begins to play a key role at this stage of the learning process. Creative and generative thinking will be the essentials for not only educational sustainability but economic, social and financial sustainability of nations. The following references will provide you with a starting point – De Bono: 1998; Rose: 1997; De Bono: 1992)

TRIGGERING THE MEMORY

70% of what you learn today can be forgotten in 24 hours if you do not make a conscious effort to remember it!

The model of memory



(Rose: 1985: 33)

The Lozanov method was to sleep on it after a learning episode. The Rapid Eye Movement (REM) sleep allows the brain to consider new things. It is as if the brain is 'off-line' like a computer.

Recall

The more you can see, hear, say and do the easier it is to learn. It has been said that, on average, we remember

20 % of what we read

30% of what we hear

40% of what we see

50% of what we say

60% of what we do

90% of what we see, hear, say and do.

(Rose: 1995: 5)

To keep recall high we need to have plenty of beginnings and endings in the learning session. Most of us can concentrate for approximately 20 minutes, after that our mind wanders. Therefore, to boost the amount of material we retain we need to stop frequently, take short breaks, sleep on it and review regularly.

Strategies

Apart from making a conscious decision to remember and completing regular reviews we can

- create multi-sensory memory through re-creating learning maps, recording the steps in the process, demonstration, teaching and sharing
- invent an acronym
- design memory flash cards
- adopt whole learning, i.e. read through thoroughly then reread quickly.

Remember, stress creates a blank mind – relax into the learning experience.

EXHIBITING WHAT YOU KNOW

There are various ways, using the visual, auditory and kinesthetic styles, to exhibit what you know.

For example:

- test yourself (use tools such as learning maps, flash cards, flow charts, say out loud, make a logical, numbered list)
- practice what you have learned through role play and mental rehearsal
- just do it!
- learn with a study buddy or seek family support and share learning
- self evaluate by recording a video of your performance, marking yourself against the criteria.

REFLECTING ON HOW YOU HAVE LEARNED

Reviewing and evaluating what and, especially, how you have learned is the crucial factor to becoming a self sufficient, independent and successful learner. The process of metacognition, whereby we consciously consider what steps and strategies we take during learning and how to improve on these, is a key characteristic of the self-motivated and self-reliant learner.

Three simple questions can guide us through any process of reflection – What went well? What could have gone better? How can I do it better next time?

DIGITAL ENVIRONMENT

The digital information world is a multi-intelligent, multi-modal, multi-sensory, multi-curricula environment. To reach our learners in this environment it makes sense to adopt a learning approach which actively involves the senses through holistic activity, combining higher order thinking and intelligences to make learning fun and enjoyable.

References

De Bono, Edward (1998) *Teach your child how to think & children solve problems*, Penguin, Ringwood.

De Bono, Edward (1992) *Six thinking hats for schools: Book 1 (Lower Primary)*, Hawker Brownlow, Cheltenham, Vic.

De Bono, Edward (1992) *Six thinking hats for schools: Book 2 (Middle-Upper Secondary)*, Hawker Brownlow, Cheltenham, Vic.

De Bono, Edward (1992) *Six thinking hats for schools: Book 3 (Lower Secondary)*, Hawker Brownlow, Cheltenham, Vic.

De Bono, Edward (1992) *Six thinking hats for schools: Book 4 (Middle-Upper Secondary)*, Hawker Brownlow, Cheltenham, Vic.

Handy, C. (1998) *Making sense of the future: the empty raincoat*.
<http://www.ausnet.net.au/Business/Market/vision/home.html>

Lazear, David (1991) *Seven ways of knowing: teaching for multiple intelligences*, Hawker Brownlow, Cheltenham, Vic.

Lazear, David (1991) *Seven ways of teaching: the artistry of teaching with multiple intelligences*, Hawker Brownlow, Cheltenham, Vic.

O'Connor, Joseph & Seymour, John (1990) *Introducing neuro-linguistic programming*, London, Thorsons.

O'Connor, Joseph & McDermont, Ian (1996) *Principles of NLP*, London, Thorsons.

Rose, Colin & Nicholl, Malcolm J. (1997) *Accelerated learning for the 21st Century: the six-step plan to unlock your MASTER-mind*, Dell Publishing, New York.

Rose, Colin (1985) *Accelerated learning*, Dell Publishing, New York.

Rose, Colin (1995) *Accelerated learning: action guide* In B. Tracy. *Accelerated learning techniques: the express track to super intelligence* [Audiotape] Niles, Illinois, Nightingale-Conant.