

MIND MOVES

removing barriers to learning

DR MELODIE DE JAGER



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At first people refuse to believe that
a strange new thing can be done,
then they begin to hope that it can't be done.
They hope it can't be done because it means
seeing the garden in a whole new way.
Then they see it can be done.
Then it is done and all the world wonders
why it was not done centuries before.

FRANCES HODGSON BURNETT, AUTHOR OF THE SECRET GARDEN

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Wherever he/him is used to refer to the learner, she/her is also implied.
Wherever the text addresses teachers and learners, parents and children are
also implied. The exercises in the book can be applied as successfully by a
parent at home, as by a teacher in a class situation.

FOREWORD

I first came across Dr Melodie de Jager when she was addressing an international audience of teachers, lecturers and government advisers. What struck me was her clarity of thought, her sense of humour and her willingness to raise important issues for discussion – usually supported by research, entertaining anecdotes, and met with gasps, reminiscences and chuckles from the audience. And so it is with this book.

In my view, basically speaking, humans are machines – machines made from hydrocarbons, controlled by electro-chemical information processors. These processors, our brains, determine our very being – they determine what we have done in the past, what we are doing now and what we will do in the future. Without our brains, we would not be able to process the information received by our senses in order to produce our behaviours.

Therefore it stands to reason that, when it comes to talking about human learning, we should all be much more aware of the factors that can influence the quality of the processing in our brains – the factors that influence the quality of mental functioning. We should also be more aware of the factors that could potentially be barriers to learning – that is, barriers to successful processing and, consequently, barriers to successful behaviour. This book identifies some of the factors that we should all be discussing.

Dr De Jager raises some important issues about our ability to learn. Mindful of the question, “What can we do to remove some of these barriers to learning without significantly increasing the workload?” she raises matters relating to, amongst other things, socio-economic barriers, emotional barriers, language barriers, learning style barriers, gender barriers, sensory stimulation and integration barriers, and inappropriate learning barriers. All of these barriers are considered against the starting point: “When a baby is born, the experience is similar to being blindfolded, abducted and left on the moon to fend for yourself” – that is, “a lifeform with the potential to become a human being”.

In accepting that learning is a “dynamic process whereby knowledge and skills are acquired and remembered”, there is appropriate discussion about learning, including reference to IQ, EQ (emotional intelligence related to controlling our thoughts and emotions) and PQ. Physical Quotient, or physical intelligence, is the ability to stimulate and manage our neurological equipment. There is good explanation and discussion of the survival brain, the emotional brain and the thinking brain, relating to typical behaviour, what one can do to support learning, and how these learners learn best. There is also a discussion about the unthinking brain.

As De Jager puts it, “When the hemispheres do not work together as a team, however, the brain is more like a horse-drawn cart which is being pulled by two horses running in different directions – it becomes unsettled and this creates barriers to learning.”

De Jager believes that the flow of information in learning and thinking involves complex processes and, therefore, a learner’s learning style cannot simply be labelled left-brained or right-brained, especially when one considers the different functions and characteristics of the two hemispheres.

In further discussion about PQ (“the effective flow of information from the senses through the different parts of the brain to produce appropriate output in the form of behaviour”), the author explains why so many learners struggle to master the skill of learning. De Jager believes that, in the absence of neurodevelopmental therapists, it would be helpful if teachers, parents and learners were able to recognise the signals that indicate that neurological immaturities have caused a breakdown in the flow of information. To this end, there is good discussion about reflexes, which should normally provide the “basic wiring for all later skills”, and what movements can be performed to help with the skills in question.

The author insists, “In the survival state a learner does not function from the whole-brain state, but from the dominant parts of his brain and body, as identified in his Mind Dynamix® Profile”, so the final chapter of the book provides “goal-specific Mind Moves® to stimulate the whole brain, the senses and the limbs for optimal performance in the classroom”.

There is much to learn from this book and, for sure, there are parts that are controversial, not least because De Jager is strong in her beliefs – “Just as you would not expect someone with a broken leg to climb a mountain, you could not expect these learners to help and change themselves”– and, as was stated earlier, it is the propensity of the author to raise important issues for discussion. She also believes that, “Teachers tend to teach the way they learn.” But, as De Jager so clearly explains in this book, the chosen way is not necessarily the way that every mind moves – whether the learner is a child or an adult.

This book is a must-read for qualified teachers and therapists, and especially teachers and therapists in training, because it raises important issues that should be considered and discussed by everyone interested in learning.

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BARRIERS TO LEARNING

When it comes to learning, staying motivated and positive – while maintaining high expectations – is the challenge many learners, parents and teachers face on a daily basis.

According to Jensen, humans are biologically designed to survive, and their single competitive advantage is their ability to learn. Why, then, do so many learners struggle to learn? The answer is that they may face a number of barriers to learning.



Barrier to learning:

Any event that prevents learning from taking place.

SENSORY STIMULATION AND INTEGRATION BARRIERS

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Sensory stimulation and integration form the basis of all thought and action, and a lack thereof causes substantial barriers to learning. The senses work like trucks transporting essential products to a town (the brain). New products (new information) have to reach the town (the brain) all the time, otherwise it cannot develop and be-comes impoverished.

Most learners are born with the potential to learn and excel, but unless the latent potential within their senses, brains and muscles is developed, they may find it difficult to realise their full potential. The senses, brain and muscles need to be stimulated in order to work together.

The Xinguana Indians, for example, are competent at hitting a target accurately at a distance of 500 metres, but they cannot read or write. In other words, even though they have superb long-distance vision, they lack near-visual skills as a result of being carried on their mothers' backs for most of their first year of life and not getting the opportunity to learn to crawl.

Research by Veras shows a strong correlation between crawling during the first year of life and the ability to comprehend and use written language. Kermoian confirms this, adding that learners who never crawled might lack cognitive skills such as object permanence and space perception. A lack of sensory-motor stimulation through crawling may therefore create a barrier to literacy and numeracy.

SOCIO-ECONOMIC BARRIERS

Many learners experience learning barriers because of their socio-economic situation – they are hungry, tired or demotivated to learn due to their living conditions. They may be tired because they need to take care of siblings, fetch water and carry wood. That leads to demotivation, because they cannot see the relevance of mathematical equations or capital letters and punctuation, or how it would help them to survive from one day to the next.

EMOTIONAL BARRIERS

Other learners may have enough to eat and get enough sleep, but are deprived of love and care by parents or caregivers.

According to the research of Schanberg and Field of the University of Miami, love and care are essential for brain growth and the subsequent ability to learn. They found that newborn mice stopped growing when they were separated from their mother. The mother's licking was the cue that they were safe and that development could continue. When the pups were not licked, their brains went into survival mode and the feeding response shut down to conserve energy. The feeding response could be restored by allowing the mother to continue licking them. As a result the stress hormones declined and the pups doubled their growth rate.

This research shows that a lack of emotional nurturance by a caring adult impairs brain growth and causes a barrier to learning.

LANGUAGE BARRIERS

For some learners, the main barrier to learning is that they do not understand the language of instruction in the classroom. In other cases they may lack the necessary vocabulary for learning. If a learner's environment has never provided him with exposure to certain experiences that prompted the development of specific vocabulary, he may have no idea what the teacher is talking about, even though he understands the medium of teaching.

Let us take the example of a learner who grows up in a small rural town without any pavements, stop signs, traffic lights or loading zones. There would be very little traffic, and therefore no need for a traffic department or traffic officer. Asking that learner to write a paragraph on a day in the life of a traffic officer might be very challenging.

It borders on child abuse to expect a child who neither understand nor speak the language of instruction in the classroom, to write and read in that language.

FRAME OF REFERENCE BARRIERS

A learner's frame of reference is shaped by exposure to a variety of experiences as well as access to television, books, magazines and the internet. These resources can expand a learner's knowledge, frame of reference and vocabulary by supplying information about a variety of lifestyles, concepts and experiences. This is the reason why it is best when preschools work according to themes to playfully expand learners' frames of reference.

This barrier to learning is perfectly illustrated by the story of an enthusiastic teacher who prepared an exciting movement and drama lesson for grade ones on space travel. She told them to stand up, don their helmets and space suits, and climb into the rocket, ready to go and explore space. The lack of enthusiasm and blank stares told her that something was not quite right. Asking the learners what a rocket was elicited the confident response: "It is brown and found on the ground." The closest thing to a rocket they knew was a rock! Can you imagine the confusion the well-meaning teacher's instructions were creating in those learners' minds? Why on earth did she want them to wear funny clothes to climb into a rock and fasten their seat belts? "Helmet", "seat belt" and "rocket" were all foreign words and concepts that created unintentional barriers to learning.



LEARNING STYLE BARRIERS

Learning style is one of the most complex barriers to learning. Your learning style is as personal as your fingerprints. For a simple demonstration of learning style differences, look at the following diagram and choose the block which matches the first block.

		
SPOON	CAR	CUP

Diagram 1.1: A simple test to determine your learning style

If you prefer pictures to words, you may have matched block 2 (eye) with block 1 (hand). If, on the other hand, you are more drawn towards words, block 3 (cup) would match block 1 (spoon) best.

Learning styles are determined by various factors, such as:

left-brain dominance (more logical, step-by-step approach) and right-brain dominance (a more open-ended, discovery-oriented approach) visual, auditory or kinesthetic sensory preferences, favouring listening, seeing or active participation environmental conditions, such as temperature, light and sound, physical preferences, like most alert time of day and need for snacking, psychological preferences, for instance, working alone or in groups.

It is almost impossible to take all these factors into account when preparing a lesson. It is therefore hardly surprising that many learners experience unintentional barriers to learning because their needs are not catered for.

GENDER BARRIERS

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Current neuroscientific research has produced compelling evidence that gender differences add to learning barriers.

THE MALE BRAIN	THE FEMALE BRAIN
Focus: Boys have a smaller corpus callosum, enabling them to compartmentalise information and focus on one thing at a time.	Focus: Girls have a larger corpus callosum, enabling them to focus on more than one thing at a time.
Vision: Boys excel at distance vision, depth perception and solving 3D-problems hands-on.	Language: Girls have a larger area for language in the brain and thus enjoy discussions and debating.
Action: Due to higher testosterone levels, boys are more action-oriented, noisy, competitive and aggressive.	Action: Due to a lower level of testosterone, girls are more cooperative and compliant, and less competitive.
Concentration: Lower levels of serotonin result in more risk-taking and poor behaviour control, while lower levels of dopamine suggest a higher need for stimulation and frequent praise.	Concentration: Higher levels of serotonin result in greater emotional awareness and behaviour control, while higher levels of dopamine suggest less need for stimulation to sustain effort.
Learns best: Action-packed, short lessons with room for competition and challenge.	Learns best: Sedentary, cooperative and non-competitive lessons with room for verbal interaction.

Diagram 1.2: A comparison of learning preferences according to gender



Corpus callosum: A bundle of fibres connecting the left and right hemispheres of the brain.

INAPPROPRIATE LEARNING BARRIERS

While the lack of appropriate stimulation may limit brain growth and create a barrier to learning, the same may be true of too much exposure to the wrong kind of stimulation, such as violence.

A report by the Carnegie Corporation of New York indicates that exposure to violence during the first three years of life constitutes an inappropriate learning experience if we want to stem the growing epidemic of violence. The brains of young learners who are exposed to violence adapt to their environment in order to protect themselves by preparing them for fight or flight, thereby rewiring trillions of connections and creating the chemical pathways of aggression.

The list of learning barriers continues, including barriers such as physical and mental disabilities, nutritional problems like malnutrition and allergies, peer pressure, labelling, the availability of resources, and so on.

However, the purpose of this chapter is not to list all the factors and conditions that might create barriers to learning.

The question now arises: What can we do to remove some of these barriers to learning without significantly increasing the workload?