

18 techniques for faster learning

- the human brain can store up to 280 quintillion (280,000,000,000,000,000) bits of memory
- everybody has the potential to be a budding Mozart, Einstein or da Vinci – we only employ a fraction of our intellect
- stimulating, enriched environments can make you smarter

Tips on becoming smarter

- **Read material that requires thinking** – particularly biographies, news magazines and newspapers. Read a non-fiction book for 20 minutes each day. Carry reading material with you for when you can turn dead time into learning time, even if only for a few minutes. Read the best of the mystery novels and try to keep one step ahead of the detectives. Get a quality dictionary and read the meaning of five new words a day, for 10 days. Before you start your reading prepare yourself by having a session on the MindLab Orion.
- **Write** – research has shown geniuses from history, such as Sir Isaac Newton, Thomas Jefferson and Johann Sebastian Bach were compulsive scribblers. They all recorded thoughts and feelings in diaries, poems, and letters to friends and family, starting from an early age. Researchers have observed this tendency not only in budding writers, but in generals, statesmen, and scientists.
- **Learn to love maths** – you don't live in a vacuum, you actually function in the real world and use maths everyday. You manage to keep down a job, balance your bank account, use credit cards and pay taxes. Yet you consider you're hopeless at maths. Be consoled by the fact that a grasp of mathematics has less to do with your intelligence than your education. If you don't understand the basic principles of maths, you were probably badly taught somewhere along the way. The problem with many people is that after they get past the age at which they should have learned something, they become embarrassed if they haven't and therefore back away from anything and everything involved with it. They feel that they've been left too far behind and that catching up is too big a task. Familiarity with mathematics will expand your power, make your intellect stronger, and be of immense help in using logic, which is itself of immense help in life. Like language, mathematics is something agreed upon in communication. We all know what is meant by the
- **Stop watching TV** – go and see a play, attend a concert or visit the library. We've grown up, most of us, trained to the artificially fast tempo of TV. Even the best of the children's programming, the most serious of the television documentaries, and the most professional news programmes cover far too much in far too short a time. Television is ingrained in most of us, we've grown up with it. BUT if you are serious about wanting to think better, and especially if you want to lengthen and strengthen your attention span, at least do it with a little control. Get out the TV guide, look through it like a menu and form a conscious decision about what you're going to put into your mind this week. Then only turn on the TV for those programmes. Debate a documentary programme, after watching it with your partner. Or think through the arguments and see if you can see other angles/perspectives. Snacking on junk programmes is as bad for your mind as chips are for your body.
- **Play games** – like chess or scrabble or other word board games. Any game that requires you to use strategy, to project yourself into future time, to think ahead several moves, and to try to outguess and out-think your opponent. Session 16, Creativity Enhancement of the MindLab Orion is an excellent session to use before beginning your game. Session 5, Athletic Warm-up and Session 6, Maintaining Peak Competitive Posture are also very good for strategy games.
- **Set yourself goals** – set a personal development goal of gaining knowledge in a specific field on a particular topic. Tell your friends and family so they can encourage you. Use learning sessions on the MindLab Orion.
- **Learn to mind map** – a natural way to organise information, according to the experts. The brainchild of Tony Buzan, a British brain expert, mind mapping proceeds from the notion that the mind does not work in a linear, straightforward fashion. It works in images, strings of associations, in tangents, loops and strange juxtapositions. Buzan claims that, almost unnoticed, mind mapping activates your entire brain – including the 90 percent that most of us neglect. It is designed to integrate the right brain's creativity with the left brain's sense of order and attention to detail. Use Session 17, Visualisation of your MindLab Orion to get you in the mood.
- **Be creative** – everyone has creativity inside them. Look at children – they can sing, dance, play musical instruments and paint wonderful pictures! It doesn't matter that you'll never appear at the Royal Albert Hall or exhibit at the Tate – just enjoy it! There are many sessions on the MindLab Orion which will help you to tap into your creativity and imagination.
- **Find out what's going on in the world** – make a conscious effort to learn more about a country or people you know nothing about. Watch and listen to current affairs programmes on TV and radio. Read world newspapers and newsmagazines. Newsagents will order them for you or they're available free at your library. Learn who the major statespeople are in countries around the world and find out more about different political systems.
- **Go for a walk** – Fresh air has a wonderful invigorating effect on the mind as well as the body!

• **Adopt the attitude that learning is a life-long process** – use it or lose it. Sign up for a course at your local college, there are hundreds of courses to choose from. There will probably be more than one you'll want to do. It can be purely for your own pleasure or for further qualifications. Whatever age you are there's always something for you. The thrill of being with like-minded people is a joy in itself. Of course you don't have to join a college, there are lots of things you can do at home. Use the Learning sessions of the MindLab Orion.

• **Improve your problem solving skills** – start solving problems your way, which means the one most comfortable to you and the way you usually handle things. For example are you a verbal person? If you approach problems with words, then get out your dictionary and thesaurus and bolster your arguments with the most convincing and appropriate words you can find. Do you have a tendency to call upon a higher authority to bolster your claims? Look through your encyclopedia and find the pertinent articles to back up your argument with facts. Are you somebody who makes lists and writes things down? Then draw up the neatest and most concise list of arguments in your favour. Make sure you list them in descending order of importance. The next step is to start solving the same problems in an unfamiliar and uncharacteristic way to you. For example, if you're comfortable writing things down, take the verbal approach instead. If you're somebody who always cites authority, make a written list without consulting anybody else, in books or otherwise. The purpose of these exercises is not only to strengthen the insight mechanism you already have, but to give you glimpses of other useful methods that might work for you.

• **Ask questions** – lots of them, take nothing at face value. Don't be a passenger in life. Don't merely follow somebody else's directions. The directions may be excellent, but they're not yours. At some point, you've got to do it yourself, go off on your own and under your own steam. When someone discusses something unfamiliar to you, ask him or her to explain. The only silly question is the one you didn't ask.

• **Yogic breathing techniques** – researchers at the University of California, San Diego, have found that yogic breathing techniques can actually improve the way our brains work. When you are working with words and logic, your left brain tends to be more active; when you are handling images or music, your right is more involved. In fact, we all have a natural two-hour cycle of switching between the sides. However, one of the ways to interrupt the cycle is to breathe through only one nostril – the left makes your right brain dominant vice versa. So to fine-tune your brain for a particular task, just close off the appropriate nostril and breathe strongly through the other.

• **Think positive** – recent research suggests that emotion and intelligence are intimately linked. Most psychologists stress the importance of having a positive outlook, but that depends on what you want to do. The upside of being down is that you have a more realistic view of yourself and what is likely to happen. For example, too much realism may be a serious drawback when you are pushing through a tricky new project; on the other hand, if you've got to read something carefully and make detailed assessment, wearing rose-coloured spectacles will make you far more prone to mistakes.

• **Eat clever food** – oily fish (tuna, salmon, sardines). These contain essential fatty acids which make up 70 per cent of the brain. Zinc (fish, meat and seeds) are used in the metabolism of proteins. Serotonin and tryptophan (turkeys, bananas, tomatoes and nettles - ouch). These are amino acids which transmit messages across the brain. Two cups of coffee, surprisingly, makes people calmer and able to concentrate more efficiently at tasks requiring hand-eye co-ordination. Among the not very clever foods are food additives, fizzy drinks, and too much sugar. These can cause hyperactivity, followed by a slump in blood sugar levels, which leads to a loss of memory and a short attention span. Alcohol, in excess, prevents the body absorbing vital nutrients. An extract of the leaves of the Ginkgo Biloba tree increases the blood flow to the brain and speeds up messages between nerve cells. Could it boost your intelligence? Some researchers believe it will. The memory and attention-span of people with Alzheimer's has been greatly improved by using a chemical called Acetyl-L-Carnitine, which is found in several common foods, including milk. Other candidates include hydergine, which comes from a fungus that grows on rye, and may stimulate cell growth. Vassopressin is a hormone diabetics use and many claim it has startling effect on memory and thinking. Choline is a form of brain chemical that helps cells communicate, and some believe it improves memory.

• **Communicate better** – which means giving up slang and cliché ridden speech. Slang merely takes the place of more accurately descriptive words, and if you don't allow them into your everyday speech, you've got to come up with the real words to say what you mean. Cliches are tired shortcuts around good vocabulary, taking the place of sharper, more original, more intelligent speech. Since words are the building blocks of thought, avoiding clichés in speech will force you to avoid them in thinking. Having a powerful vocabulary is using the right word to get the desired result. Long, unfamiliar words only confuse and frustrate receivers of your messages.

How can the MindLab Orion/Proteus/Little Calm Machine make you smarter?

Each of us possess a thinking machine vastly superior to our feeble conscious minds. There is no practical limit to the amount of information you can put into your brain. You can take advantage of its vast capacity to soak up knowledge by pursuing any topic that interests you. You can learn anything you want. But what is it that gets in our way?

We are our own worst enemy sometimes. One of the biggest drags on our intelligence and learning ability is what we secretly believe about ourselves. We all have a little voice in our head that says: "Don't be too smart, no one will like you".

Or, “No one in our family has ever been good at maths.” One of the first steps to improving your intelligence is to get rid of all those negative thoughts implanted by parents, teachers and schoolmates.

Learning is enhanced when you are in a relaxed, alert state. Absorbing new information and concepts – and memorisation too – becomes easier. The MindLab Orion has inbuilt sessions which are excellent for preparing your mind to take in new information.

Says Robert Jefford from Gillingham: “The MindLab has also helped me in my studies – I do lots of complex and exacting research, so I need a clear and focused mind. My MindLab brings clarity and focus to each project, so I can call information to mind quickly and assimilate new knowledge with ease.”

Session 12 Quick Alertness Break

Lasts 10 minutes and is a perfect session to help you remain focused on your studies. Designed to be used every 40 to 60 minutes. This session will help you to better integrate the material during your study period.

Session 13 Learning with Tapes

Lasts 35 minutes and is specifically designed for use with language tapes. It uses the techniques pioneered by a Bulgarian researcher, called superlearning. It involves developing a state of relaxed and focused concentration.

Session 14 Relax Before Exams or Pressure Situations

Lasts 15 minutes and will leave you with a sense of calm, focus and confidence. Concentration can be broken when you are feeling uneasy. Everyone has had the experience of taking an exam, feeling pressured and forgetting material they easily remember when the pressure is taken off. This session is ideal for use before an exam or presentation.

Section 15 Concentration

Lasts 15 minutes and is designed to quickly bring you into a calm, focused state. A relaxed body allows the mind more ability to be alert and attentive. Your main focus when using this session should be to allow your body to become as relaxed as possible while maintaining your alertness. Use your breathing exercises to help you do that.

Section 16 Creativity Enhancement

Lasts 20 minutes and sweeps through a series of frequencies to help stimulate your thought processes. Use it frequently for maximum benefit. Try this one for several days in a row for help with problem solving. Try not to push for a solution: try to allow one to come on its own. Sometimes letting go is the best method.

Section 17 Visualisation

Lasts 20 minutes and to be used when you feel tired and want a session that moves through a series of frequencies for stimulation and visualisation. If you are a visual person, you will see all kinds of kaleidoscopic imagery. The session is enjoyable with very pleasant after-effect.

Keeping up with the Mozarts, the Einsteins and the da Vincis

Despite all this awesome computing power in our heads, most of us are hard put to multiply two-digit figures without resorting to a calculator, while even fewer can manage the daily crossword puzzle or remember what they had for dinner last Wednesday. Only the Mozarts, the Einsteins and the da Vincis seem to use their brainpower efficiently (and the evidence shows that even they employ but a fraction of their intellect). So stupendous do their talents seem to the rest of us that we look upon such geniuses much as the ancients did – as divinely gifted beings endowed with what appear to be supernatural powers.

What have they got that we haven't?

Well, put it this way, there's hope for us yet. Seldom do geniuses distinguish themselves early in life. Many are labelled difficult, slow or even stupid. The mathematician Henri Poincare did so poorly in an IQ test that he was judged an ‘imbecile’. Thomas Edison, whose record 1,093 patents outstripped every inventor in history and transformed human life, was notoriously slow in school.

“My father thought I was stupid,” Edison later recalled, “and I almost decided I must be a dunce.”

As a child, Albert Einstein, too, appeared deficient to his elders, partly due to his dyslexia, which caused him great difficulty in speech and reading. His poor language skills provoked his Greek teacher to tell him, “You will never amount to anything.” Einstein was later expelled from high school and failed his college entrance exam. After finally completing his bachelor's degree, he failed to attain either an academic appointment or a recommendation from his professors. Forced to accept a lowly job in the Swiss patent office, Einstein in his mid-twenties seemed destined for a life of mediocrity.

But in his twenty-sixth year – Eureka! Einstein published his Special Theory of Relativity – which contained his famous formula, $E = mc^2$ – in the summer of 1905. Sixteen years later, he had won a Nobel prize and become an international celebrity. Even today his bushy moustache and shock of silver hair remain the quintessential image of “genius”.

Einstein’s brain is missing

When Einstein died in 1955, the pathologist removed and kept his brain, without permission from Einstein’s family. For the next 40 years he studied it under microscope and dispensed small chunks to other researchers upon request. He wanted to uncover the secret of Einstein’s genius.

He never did find anything. But in the early 1980s, one of his colleagues, Marian Diamond a neuroanatomist at the University of California, announced an amazing discovery – one that was to revolutionise ideas about learning and genius.

Making a genius

Most people assume that geniuses are born, not made. But Diamond has devoted her career to creating genius in the laboratory. In one famous experiment, she placed rats in a super-stimulating environment, complete with swings, ladders, treadmills, and other toys. Other rats were confined to bare cages. Those rats who lived in the high stimulus environment not only lived to the age of three (the rate equivalent of 90 in a human), but their brains increased in size, sprouting forests of new connections between nerve cells in the form of dendrites and axons – spindly, branch-like structures that transmit electrical signals from one nerve cell (or neuron) to another. The rats who lived in bare cages stagnated and died younger. Their brains had fewer cellular connections.

In 1911, Santiago Ramon y Cajal, the father of neuroanatomy, had found that the number of interconnections between neurons (called synapses) was the real measure of genius, far more crucial in determining brainpower than the sheer number of neurons. **Diamond’s experiment showed that – at least in rats – the physical mechanism of genius could be created through mental exercise.**

But did this apply to people? Diamond wanted to find out. She obtained sections of Einstein’s brain and examined them. As she expected, she found an increased number of glial cells in Einstein’s left parietal lobe – a kind of neurological switching station that Diamond described as an “association area for other association areas in the brain”. Glial cells act as a glue holding the other nerve cells together, and also help transfer electrochemical signals between neurons. Diamond expected them because she had also found high concentrations of glial cells in the brains of her enriched rats. Their presence in Einstein’s brain suggested that a similar enrichment process was at work.

Use it or lose it

Unlike neurons – which do not reproduce after birth – glial cells, axons, and dendrites can increase in number throughout life, depending on how you use your brain. Diamond’s work suggested that the more we learn, the more such connections are formed. Likewise, when we cease learning and our minds stagnate, these connections shrivel and dwindle away.

The implication for educators is clear. If Einstein’s brain worked anything like the brains of Diamond’s rats, it may be possible to create new Einsteins by providing sufficiently stimulating mental exercise.

Thankfully, we humans don’t have to fill our homes with swings, ladder and treadmills. Einstein himself had some thoughts on the subject. He believed that you could stimulate ingenious thought by allowing your imagination to float freely, unrestrained by conventional inhibitions.

Go with the flow and improve your intelligence

You are unlikely to be able to alter your God-given intelligence, but you *can* alter your crystallised intelligence. It’s like anything else: use it or lose it. You need to do mental gymnastics. Dr Michael Howe, a psychologist from Exeter University and the author of *Hot House Children*, cautions: ‘You have to put in the work, even those who people say are natural geniuses – that’s not true, they work at their particular skill all the time.’

Motivation is central to this. Only those who are really motivated apply themselves hard mentally. Motivation is part of cognitive intelligence, and may determine the quality and quantity of mental capacity, according to Professor Sternberg: ‘Studies show that adults who use their intelligence actively do increase in intelligence.’

Light and sound devices

These devices remove the everyday mind-chatter and clear your mind to whatever task lies ahead, whether it be sleep, relaxation and meditation, learning or physical activity. Fully alert and lucid your brain is now functioning far more effectively than it was before.

Your memory – your ability both to memorise new information and to recall information you have already learned – has increased dramatically. Your ability to think creatively, to solve problems, has expanded. The speed with which your brain cells pass messages among themselves has increased. In fact, many of your brain cells have actually grown – a microscopic examination would show that the brain cells have developed more dendrites (remember, the rats and Einstein) You are more intelligent than you were a half hour before.

Check out the light and sound devices at the LifeTools site at: <http://www.lifetools.com>

