

## **Barker Institute Presentation 14 May 2018**

### **'CREATING AN OPTIMAL LEARNING ENVIRONMENT'**

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#### **Synaptic Brain Pruning**

The process by which multiple connections between a neuron are reduced to fewer connections. To strengthen the pathways most frequently used, so that information and learning is more efficiently organised.

#### **Importance of Exercise**

Physically active individuals were found to have increased concentration and enhanced attention spans due to larger brain volumes in the basal ganglia and hippocampus, areas associated with cognitive control, thoughts, actions, behaviours and decision making and memory.

(Medical News Today. 2014, December 5 <http://www.medicalnewstoday.com/releases/286430.php> )

The left and right halves of the prefrontal cortex appear to become more interconnected in response to consistent aerobic exercise. Practicing mindfulness can enhance prefrontal activation, which is correlated with increased well-being and reduced anxiety. (<https://www.neuropsychotherapist.com/prefrontal-cortex/>)

Exercise is considered as successful for managing depression as are other professionally recommended strategies, such as counselling and medication. (Parker, G.J., & Crawford, J., 2007. Judged effectiveness of differing antidepressant strategies by those with clinical depression. The Royal Australian and New Zealand College of Psychiatrists).

#### **Importance of Sleep**

Research shows that "neuronal representations of memories are reactivated during sleep, as if the brain were replaying a recording". Long-term memory storage requires this process, moving the important stuff out of your short-term memory to your long-term memory. The study, published in the *Journal of Neuroscience*, concludes that the brain evaluates information based on future expectations. After a good night's sleep, we remember information better when we know it will be useful in the future.

## **A Nurturing Study Environment**

### **1. Physical Environment**

Staying engaged in exercise – grow more brain cells.

### **2. Cognitive Environment**

Working with your unique learning style – prune unhelpful pathways, strengthen important ones.

### **3. Emotional Environment**

Managing emotional energy - identify how you are feeling, harness your neurochemistry.

### **4. Social Environment**

The power of learning in teams – build a study buddy system to harness collective learning.

### **5. Pro Social Environment**

BE KIND - Helping others – Soothe the mind

How Do I Learn?

## **Learning Styles**

### **1. Visual -Spatial**

- Prefer using images, pictures, colours, and mind-maps to organize information.
- You can easily visualize objects, plans & outcomes in your mind's eye.
- You have a good spatial sense, which gives you a good sense of direction.
- The whiteboard is helpful, you love drawing, mind mapping, scribbling & doodling, especially with colours.
- You listen better if doodling or fidgeting, the movement helps concentrate your focus.

### **2. Musical**

- Use sound, rhyme and music in your learning, set them to a jingle or part of a song. A-B-C....
- Use sound recordings to provide a background may help visualizations.
- Make the most of rhythm and rhyme, RAP.
- If you have some particular music or song that makes you want to 'take on the world,' or help you focus play it back and anchor your emotions and state. When you need the boost, you can easily recall the state without needing the music.

3. Verbal
  - Some speak to what they know better than writing about it, speaking out loud to consolidate thoughts and ideas. Have a parent type while you talk, or speak out loud recording ideas before structuring and editing written content.
  - When reciting out loud, make it dramatic and varied. This helps your recall, and you get to practice your presentation for an oral presentation, debate or negotiation.
  - Use synonyms to broaden use of language.
  
4. Logical – Mathematical
  - Classifying information via pattern recognition and seeing connections. Work through problems systematically with procedures, itineraries, to-do-lists.
  - Work with theories in different ways, from different perspectives. An argument against can help reinforce into memory the argument for. We tend to remember the unusual.
  - Scientific approach to thinking means supporting points with logical examples or statistics.
  
5. Social – Interpersonal
  - Communicate well with people, both verbally and non-verbally. Sensitive to their motivations, feelings or moods. You listen well and understand other's views. You may enjoy mentoring or counselling others.
  - You typically prefer learning in groups or classes, or you like to spend much one-on-one time with a teacher or an instructor. Learning is heightened by bouncing thoughts off other people and listening to how they respond.
  - Mind Maps and systems diagrams.
  
6. Introspective
  - You think independently and know your own mind. Make plans and set goals. Quiet, reflective, private.
  - If you don't know your current direction or purpose in life, you feel a deep sense of dissatisfaction. You seek to define clear goals and how to achieve them.
  - Align your goals and objectives with personal beliefs and values. If they are not aligned, your motivation and confidence may be impacted.
  - Write things down and don't be afraid to ask questions.
  
7. Kinesthetic Body and sense.
  - Like sports and exercise, and physical activities such as gardening or woodworking.
  - Exercise triggers ideas and helps problem solve. You would rather go for a run or walk if something is bothering you, than sitting at home.
  - When learning a new skill or topic, prefer to 'jump in' and play with the physical parts asap, i.e. pull an engine apart and put it back together, rather than read or look at diagrams about how it works.
  - Sitting in a lecture listening to someone else talk is boring, need to fidget, can't sit still ...

8. Naturalistic
  - Being outside in nature and able to read the natural environment with good spatial awareness. Practical and hands-on.
9. Existential
  - Why are we here? – asking and reflecting on the bigger questions of life.

#### Inflexible Mind can Trigger Mental ill-health (Prof Parker: Founding Director Black Dog Institute)

- Those with high levels of general anxiety who are at risk of depression because of their worrying, catastrophising propensities, and their tendency to take things too personally.
- “Shy” people who are often this way due to having been bullied or humiliated in their early years. They often view social interactions with others as threatening in comparison to the safety of their own company.
- Those who are “hypersensitive” to judgement by others. This could be praise or feeling (perhaps inappropriately) they are being rejected or abandoned. These people often respond by sleeping more and craving certain foods that may settle their emotional dysfunction.
- “Self-focused” individuals who are hostile and volatile with others, blame others when things go wrong and prioritise their own needs. When depressed, they tend to show a “short fuse” and create collateral damage for those around them.
- Perfectionists who are prone to self-criticism and a loss of pride. They may also have a limited range of adaptive strategies to stress.

#### Study Strategies for Managing Anxiety

1. Learn to recognise when you are feeling stressed (Take mental downtime)
2. Identify Triggers – (Problem solve and/or talk to someone).
3. Avoid comparing your abilities with others ... (We all have unique abilities)
4. Develop a study plan to allocate the number of hours required to complete the task.
5. Eat right. ...
6. Sleep well. ... (recommended approx. 9 1/2hrs)
7. Exercise. ... (75mins to 150mins of moderate to vigorous exercise per week (Mayo Clinic)
8. Switch-off technology... (keeps screens out of bedrooms at night)
9. Take movement breaks.... Breathe
10. Employ study strategies that match your learning style
11. Study with others
12. Remember you are more than your last exam result!!!