



Embracing Neurodiversity in Aviation

**The importance of neurodiversity
awareness, understanding and
inclusion for the aviation community.**

Struggling with pilot theory exams?

Sarah Sharpe, Neurodiversity Education
Specialist Teacher & pilot, offers tailored
one-on-one & small group sessions,
face-to-face or online.



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**Sharpe
Minds**



www.sharpe-minds.com

Workshop Outcomes

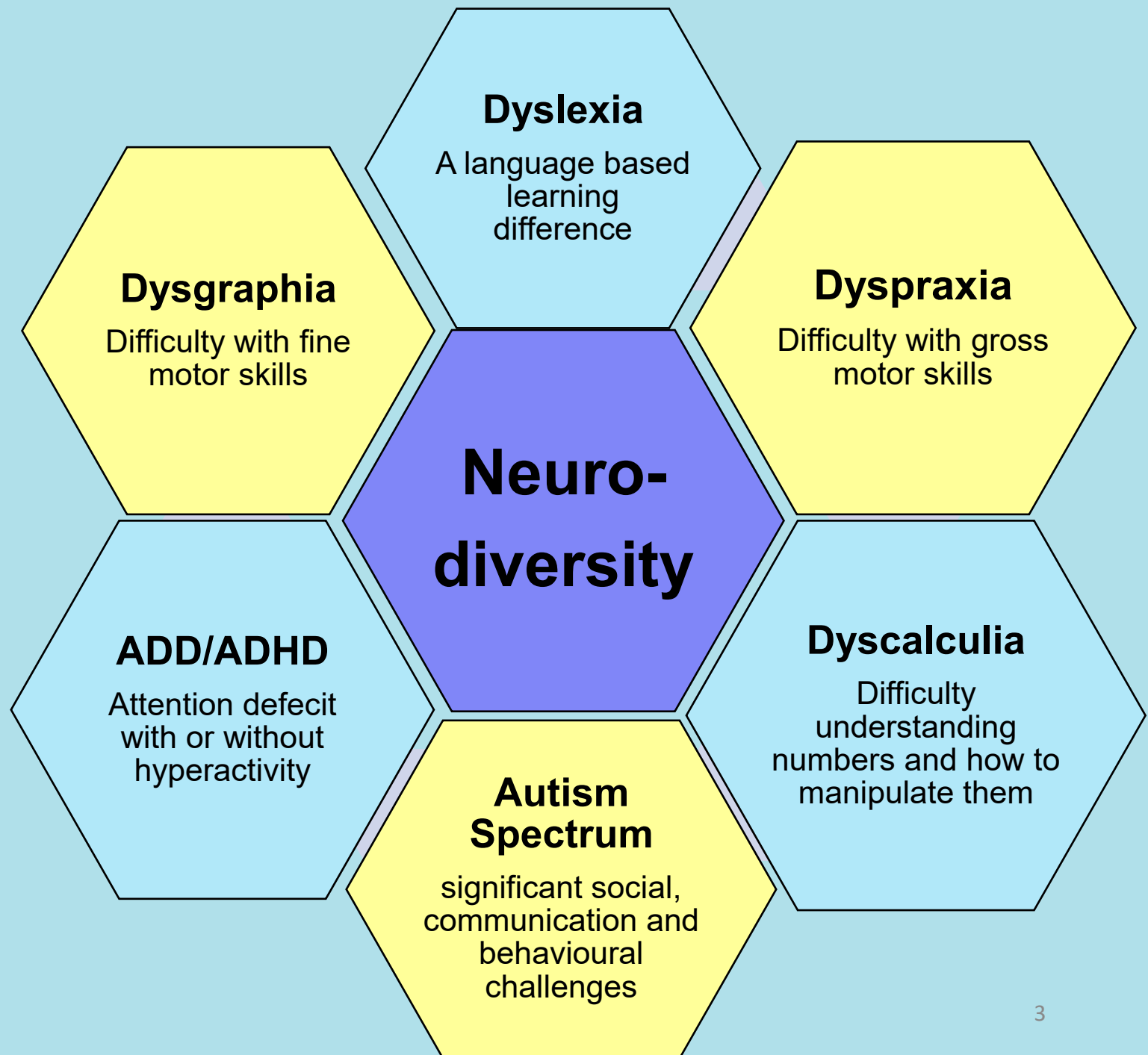
These workshops will provide an understanding of:

- ✓What it means to be neurodiverse.
- ✓How it may present.
- ✓How we respond to those who are neurodiverse.
- ✓Key strategies.
- ✓The value of neurodiversity in aviation.
- ✓An opportunity to share experiences.

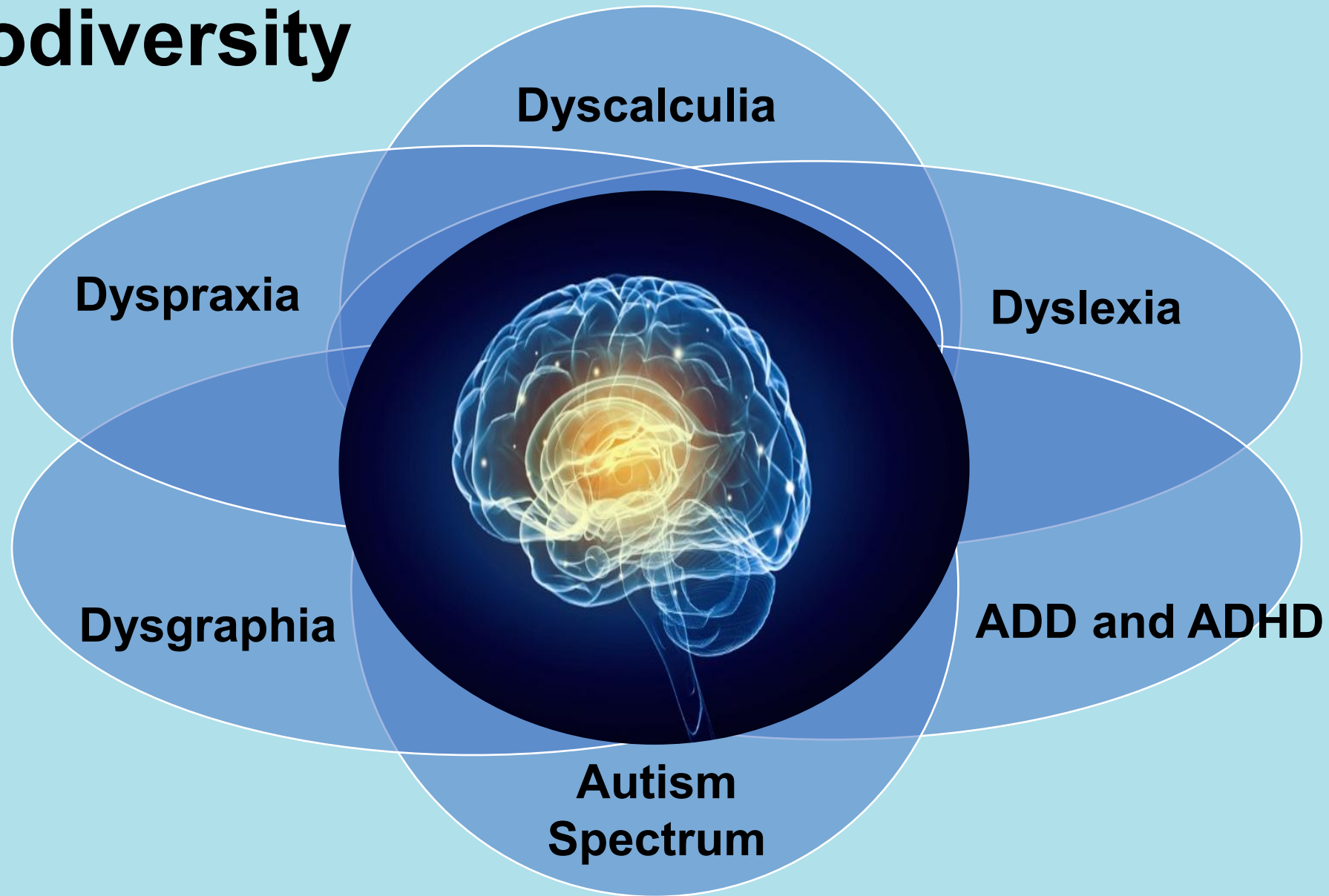
Neurodiversity is a concept where **neurological differences are recognised and respected** as any other human variation.

These differences include:

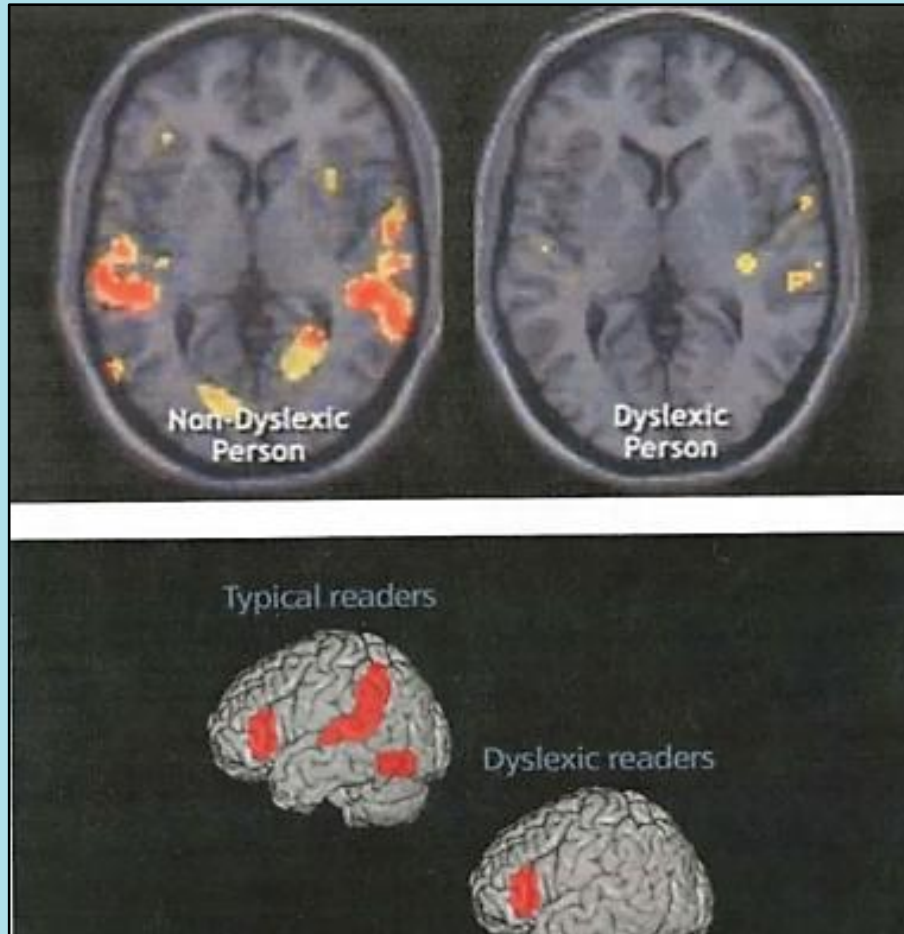
Dyspraxia, **Dyslexia**,
Dyscalculia, Dysgraphia,
**Attention Deficit
Hyperactivity Disorder**,
Autism Spectrum, and others.



Neurodiversity



fMRI (functional Magnetic Resonance Imaging) **brain scans**



Non - Dyslexic / Dyslexic Brain comparison

Non-Dyslexic



● Broca's area, Inferior frontal gyrus
[articulation/word analysis]

● Parieto-temporal
[word analysis]

● Occipito-temporal
[word form]

Dyslexic



● Broca's area, Inferior frontal gyrus
[articulation/word analysis]



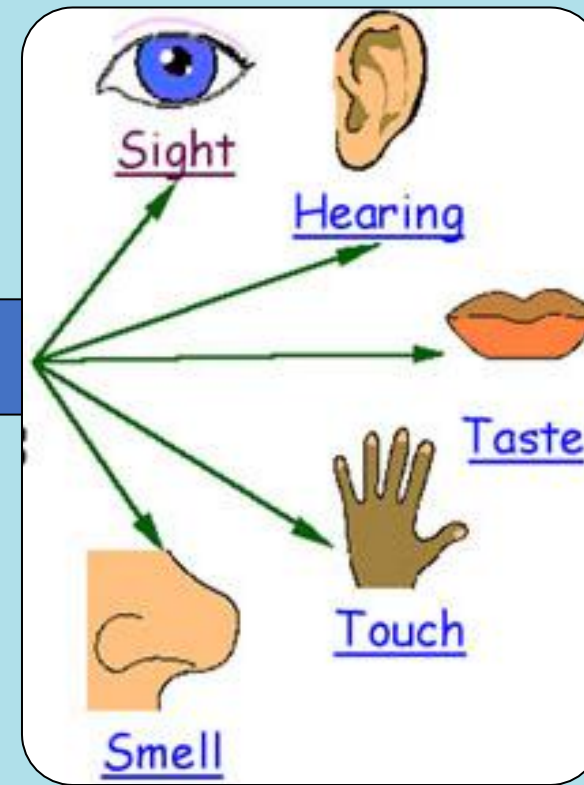
Richard Pearce memorial

RICHARD WILLIAM PEARSE
1877 - 1956
NEW ZEALAND'S PIONEER AVIATOR
THIS MONUMENT COMMEMORATES THE FIRST
POWERED FLIGHT TO BE MADE BY A BRITISH
CITIZEN IN A HEAVIER THAN AIR MACHINE.
MOST EVIDENCE INDICATES THIS FLIGHT
TOOK PLACE ON 31ST MARCH 1908 AND
ENDED BY CRASHING ON THIS SITE.

‘I was diagnosed as dyslexic ... yet still **successful** in becoming a **pilot in the RAF**.

... was **top of my training courses** as well as scoring the **highest aptitude score** during selection. I ‘pilot my life’ in a unique spectrum which non dyslexic people aren’t able to access! Now I work with lots of people in helping them discover their **own personal uniqueness and zones of genius**, because we all have them.’

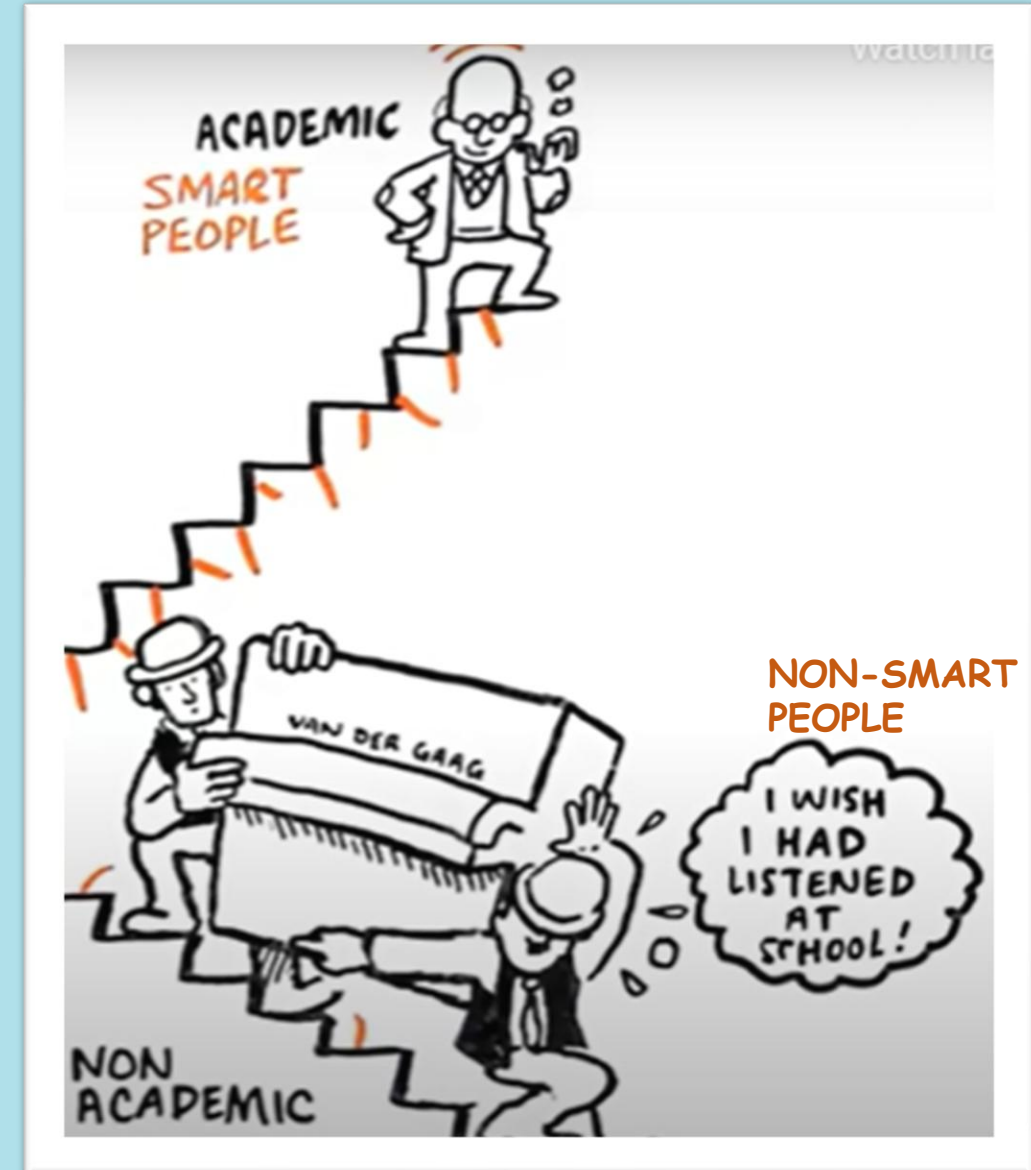
‘Believe me, **it does not take much to make someone feel they are stupid and not good enough**. ... **my flying skills came easy**, but I had to work differently to others to achieve the academic side, which I also did very well in all honesty. I am now building a kitfox and fly a piper cub. I am hoping to be able to **inspire others and teach in a way that others cannot**.’



Simply put –
neurodiversity is a difference in how our brains
are wired.

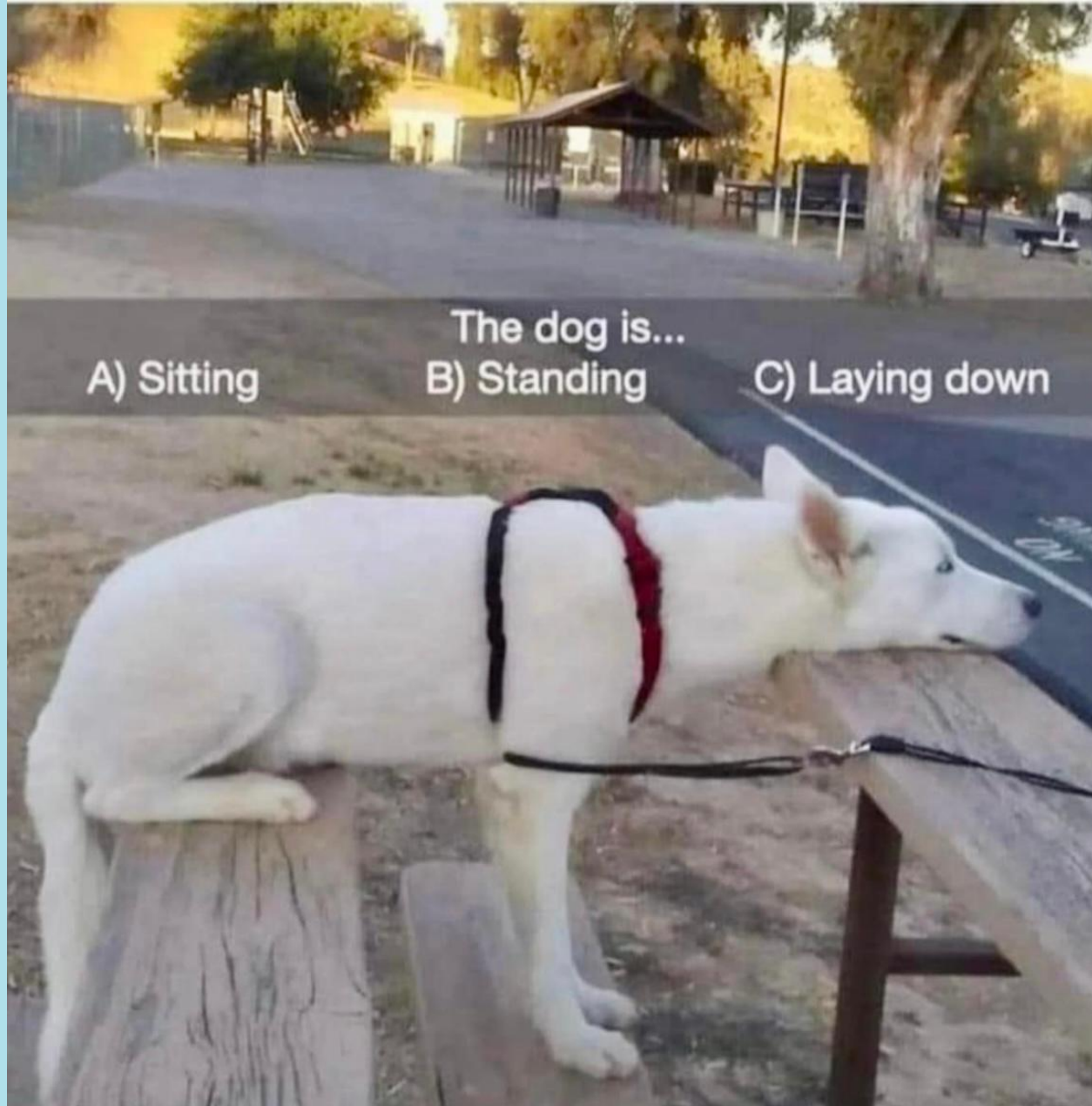
This difference affects how we **process**
information.

A lesson in history...



CPL exam questions be like...

LawyerIssues



A) Sitting

The dog is...
B) Standing

C) Laying down

It's all about how we perceive those with differently wired brains...



And, more importantly, **how they perceive themselves.**

Flipping our Thinking



Focus on **strengths**
not weaknesses

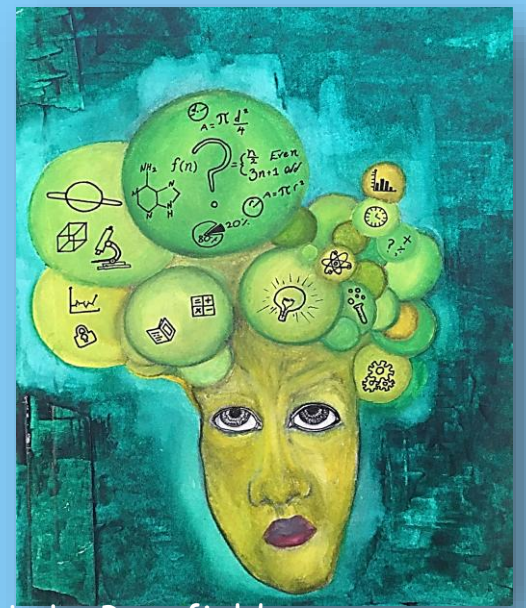
Move from deficit remediation
to **capacity building**



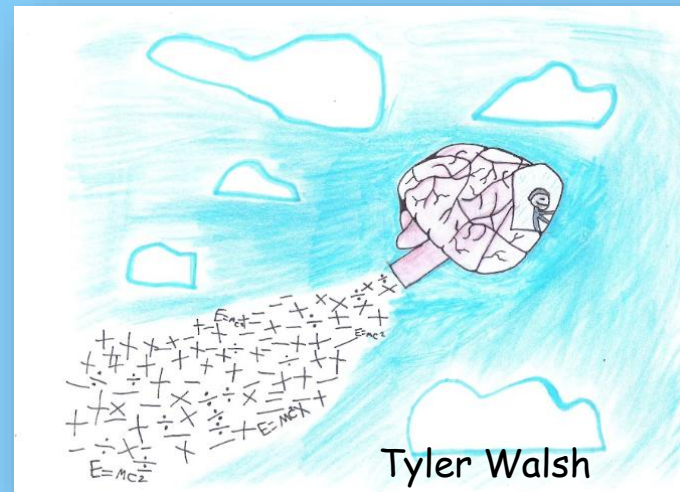


Strengths or 'Superpowers'

- Strong oral ability – effective communicators
- Ability to think in pictures, sometimes in moving 3D
- Ability to manipulate images in their mind's eye
- Practical, hands-on strengths
- Strong problem solving skills
- Creative and imaginative
- Ability to think 'outside the square' - big picture thinkers
- Able to see patterns and links where others can't
- Inventive and innovative
- Entrepreneurial
- Strong empathy towards others
- Deep thinking; resilient
- Energetic



Luka Benefield

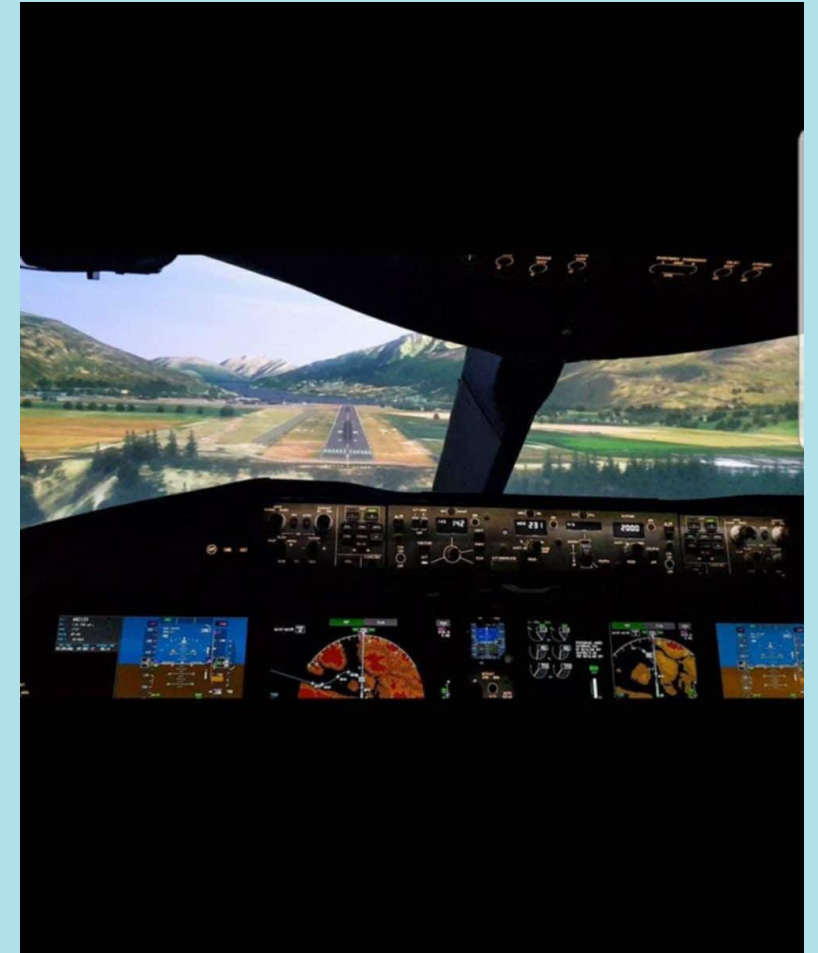


Tyler Walsh



Sam Barker

“Let me do it practically first, then I can understand, explain and remember the theory.”



‘Diagnosed with **ADD/ADHD**, I have struggled with written learning all my life and yet have **always excelled in practical aptitude tests. Learning to fly was very straightforward as I could "feel" what was right in the cockpit before I could rationalize it.** The written exams were always hard work but **the practical side just clicked.** Similarly with my career in Air Traffic - as a FISO I found that **I could retain a huge amount of traffic and situation awareness in my mind, keeping up with the very busy summer days and being able to provide effective advice.** This has translated to my career now as an ATCO - again the book work has always been very hard work but **once a practical concept clicks for me things become "obvious" as to what needs to be done.** I am absolutely convinced that we do people down who have a different brain type - **there are people who have a huge aptitude who simply do not fit a conventional educational mould, and given the right opportunity will excel.**’

dys·lex·i·a

**the umbrella slang word for
the general public's inability
to understand the complex and
extraordinary thought process of
multi-dimensional freethinking.**

Freethinkers University

www.dyslexia.tv

1. Safety enables Success:

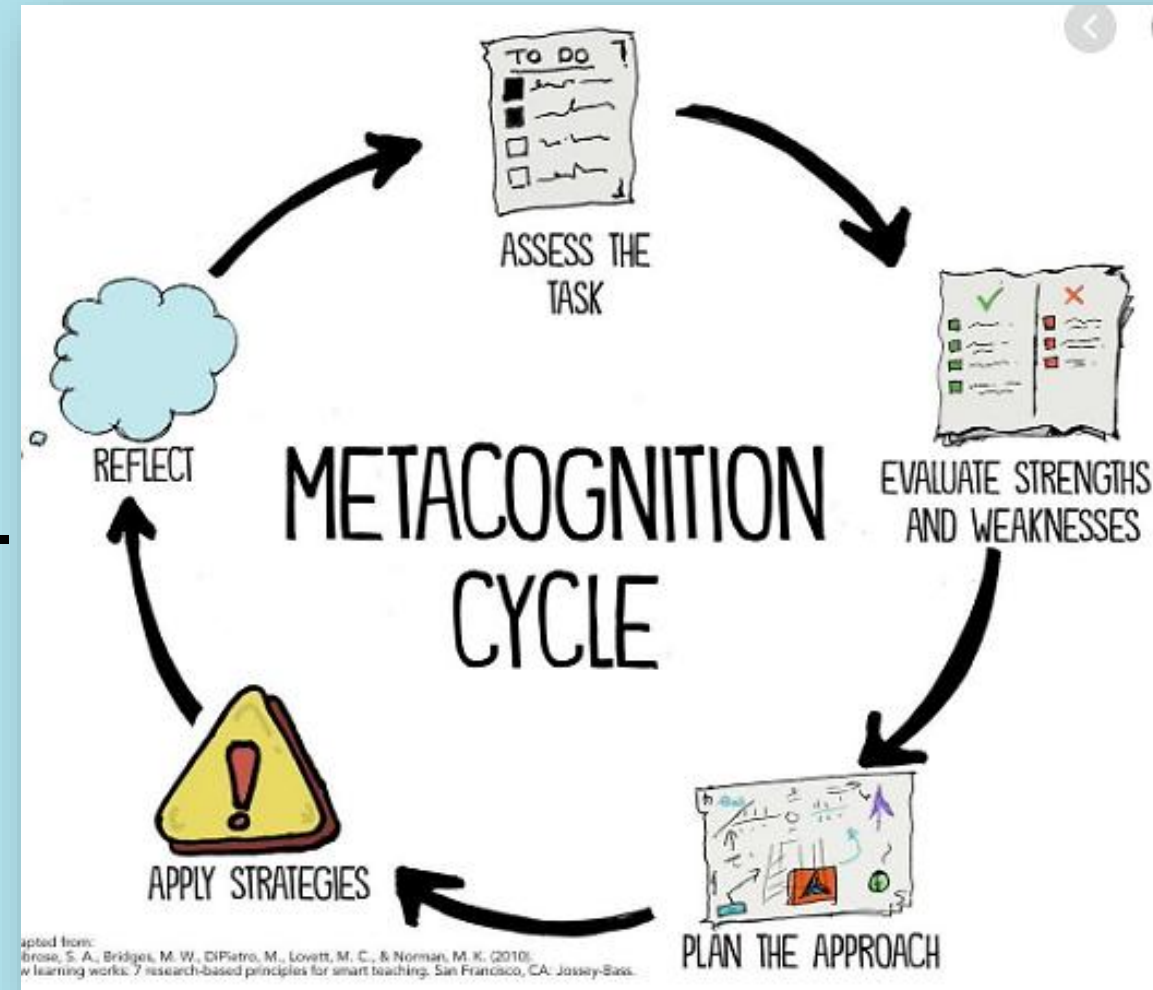
- Keep an open mind
- Be patient, be kind.
- Build positive relationships.
- Boost self-esteem and motivation.

It's really all about having **empathy**.



2. Metacognition – learning how best to learn

- A student-centred, strengths based approach.
- Enables the student to take control of
- their learning.
- Students learn how to “drive their own brain”
- Create and use **Individual Learning Profiles**.
- Encourage students to use their strengths
- and personal strategies to help them learn,
- understand and remember.



A Personal Learning Profile

Name _____



A Personal Learning Profile

A Personal Learning Profile:

1. My brain
2. My learning preferences
3. My strengths
4. My Learning Strategies

www.sharpe-minds.com/resources

‘I’ve particularly appreciated how you manage with ease to make the complex simple. I have been very grateful you have bucketloads of patience and are passionate towards helping others. Your skills are genius in the way you can easily adapt and educate those of us who have different ways of learning.’

Fixed-Wing Student

...my fighter pilot dreams were destroyed by the time I was in high school, and I ended up leaving in year 10.

Fast forward a few decades, and I've held an RPL for the last 8 years. I excelled in flying training, and went solo very quickly. I also have tailwheel and CSU/retractable endorsements.

I didn't expect to get so emotional about this, but I guess it's been bottled up for a long time.

Thank for you for listening and providing insights into neurodiversity. It has given me hope.

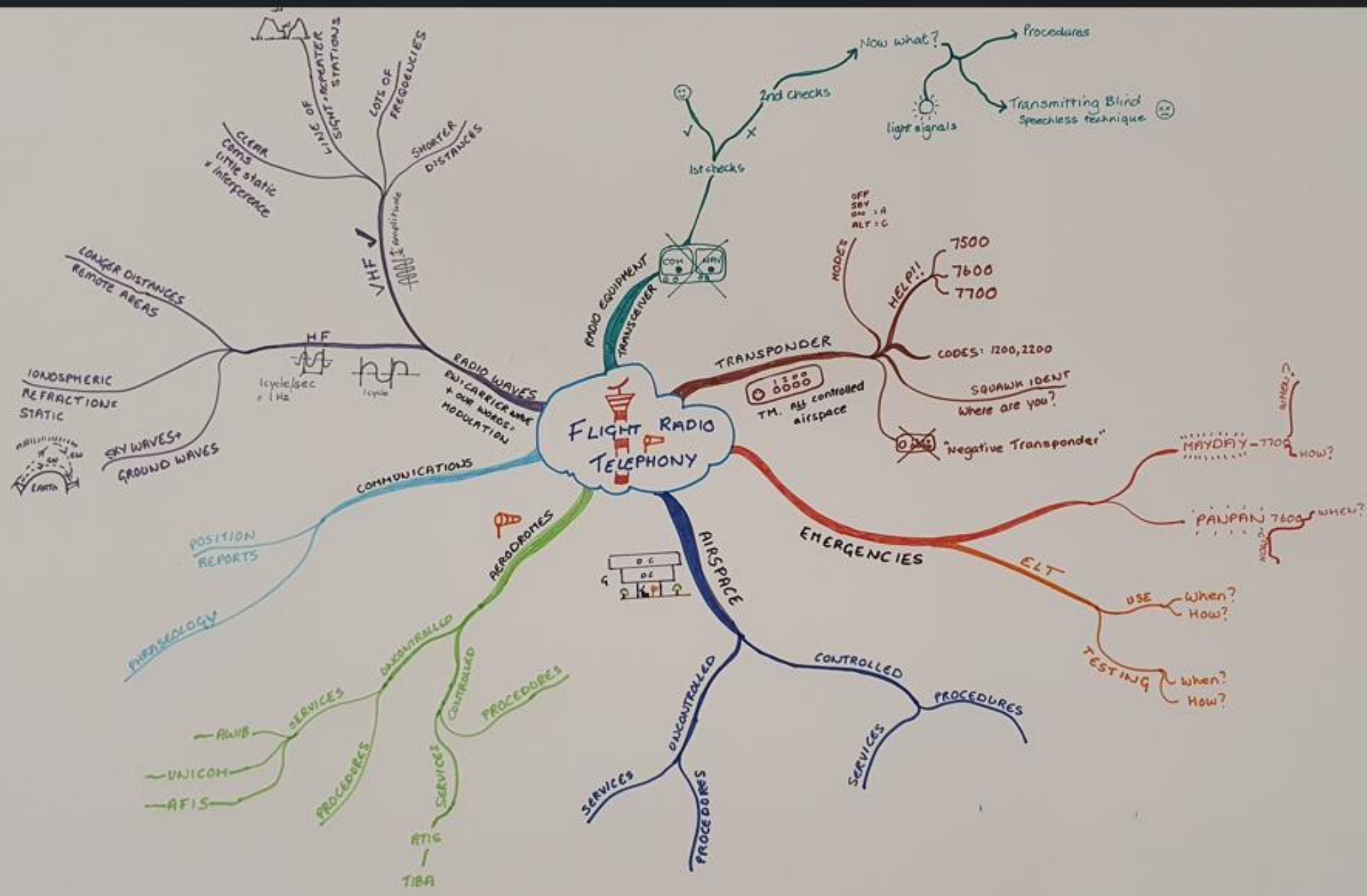
I'll certainly be in touch in the future.

GA Pilot

3. Multisensory teaching techniques:

- Be aware to tap into all the senses when teaching:
- See it, hear it, touch it, smell it, taste it, do it.
- Relate learning to real life.
- Allow hands on opportunities whenever possible.
- Encourage visualisation.
- Use scenarios/stories to help retain information.
- Encourage mind-mapping.
- Use plenty of visuals – models, diagrams, pictures, videos.
- Encourage the use of highlighting and colour coding key information.





3. Minimise Visual Stress

When presenting/sharing written resources:

Make font type, size, line spacing and background colour reader friendly.

Borders can also be helpful.

Try coloured **Irlen** overlays.

a b c d e f g h i j k l
m n o p q r s t

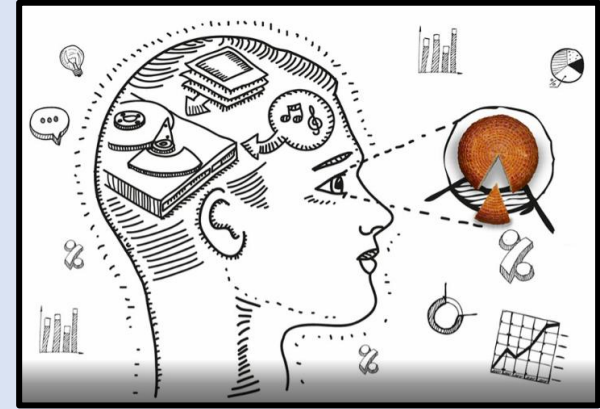
a b c d e f g h i j k
l m n o p q r

open-dyslexic-font
A font for dyslexic
geeks, like me?



Avoid using big blocks of text whenever possible as this can often be an insurmountable obstacle for many learners, especially those who are neurodiverse. If they are visual thinkers, all words that they cannot visualise may be lost and sentences break up into a series of disconnected images. This makes comprehension very difficult and without comprehension, the reader will not retain what they have read. In addition, visual stress can be a real problem for some. Many learners with dyslexia cannot retain what is read and will often feel that reading is pointless.

- Use plenty of visuals.



- Bullet point lists of key ideas.
- Borders around the text.
- Reader friendly font and page colour.

10 Takeaway Tips...

1. Be patient and understanding.
2. Teach metacognition.
3. Use multi-sensory teaching strategies.
4. Relate learning to real life scenarios.
5. Provide opportunities for hands-on learning whenever possible.
6. Allow more time for learning and over learning.
7. Minimise visual stress.
8. Use lots of visuals and bullet points rather than loads of text.
9. Give step by step oral, diagrammatic and written instructions.
10. Encourage use of technology to remove barriers.