



Adolescent Learning Strategies

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Adolescent Learning Strategies

- Chief Instructor ADFA 2011-2013
- Previous instructional experience RMC-Duntroon
 - 2001-2002 Captain: Instructor (1st Class Tactics and Leadership)
 - 2007 Major: Senior Instructor War Fighting, Officer Commanding Field Training
 - 2008 Major: Deputy Chief Instructor
- ADFA Trainees were very different
 - Issues with integrity
 - Behavioural problems
 - Lack of motivation
 - Culture?
- Why were they so different?
- IPB on the adolescent brain
 - Cognitive neuroscience (growth, development and function)
 - Educational psychology (how people learn)



Adolescent Learning Strategies

- Disclaimer:
 - None of what I will discuss today excuses unacceptable behaviour.
 - My discussion aims to explain some unacceptable behaviour.
 - If you understand the root causes of unacceptable behaviour you have a better chance of disrupting or dislocating it – it's a bit like a Counterinsurgency.
 - There is a difference between training and education. We **train** for certainty (ie. Drill). We **educate** for uncertainty (problem solving). Everything I will discuss today is focused on education and behaviour.
 - You don't need to change how you do a Drill lesson.
 - PTI's can still provide constructive criticism of a trainees technique or motivation.

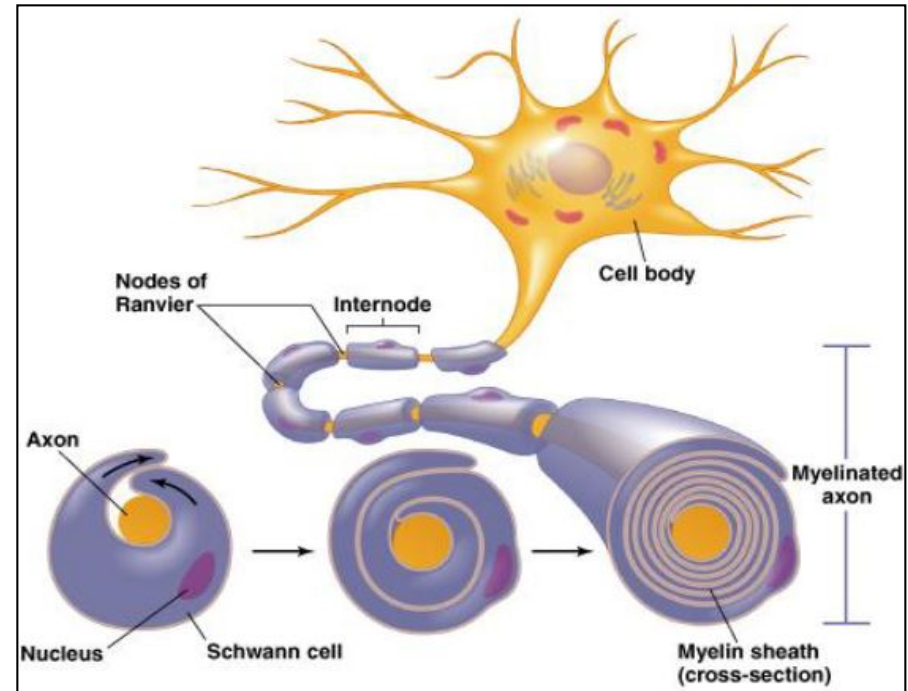


Adolescent Learning Strategies

- Why adolescent learning strategies
 - Adolescent is a term used to define the period of growth from child to adult, often associated with sexual maturity.
 - Although the brain has reached its full adult size by about 12 years of age, there are significant developmental changes that continue to occur until about 25 years of age. Accordingly, the brain is still maturing and adolescent despite the fact that it's life support system has reached the legal age of majority at 18.
 - Interesting, the World Health Organisation is increasing using the term 'Youth' to describe the 15-25 year age bracket (recognising behavioural similarities rather than legal age of majority)

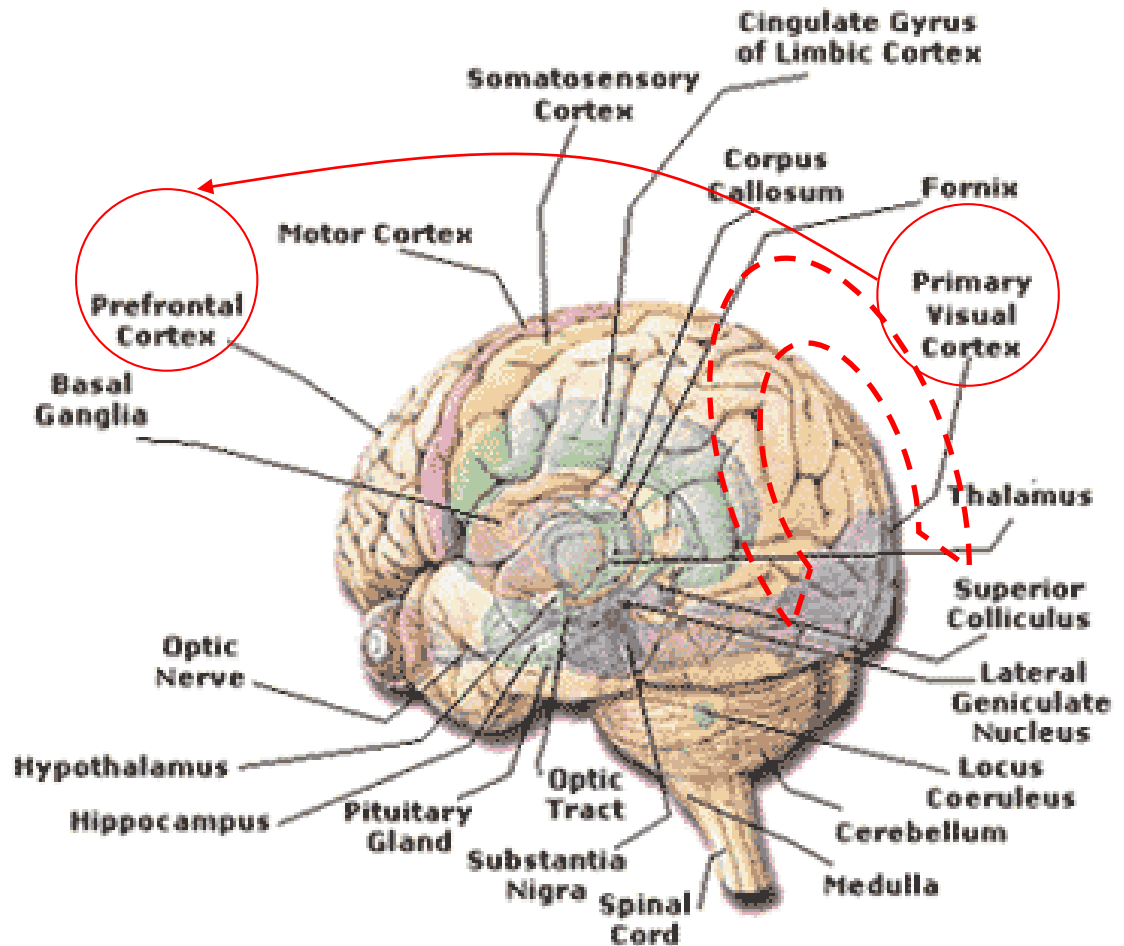


- **Myelination.** The coating of an axon between neurons with fatty tissue (white matter). Speeds up neuron impulses.
- In essence, increases the bandwidth, changes the brain from dial-up to broadband.



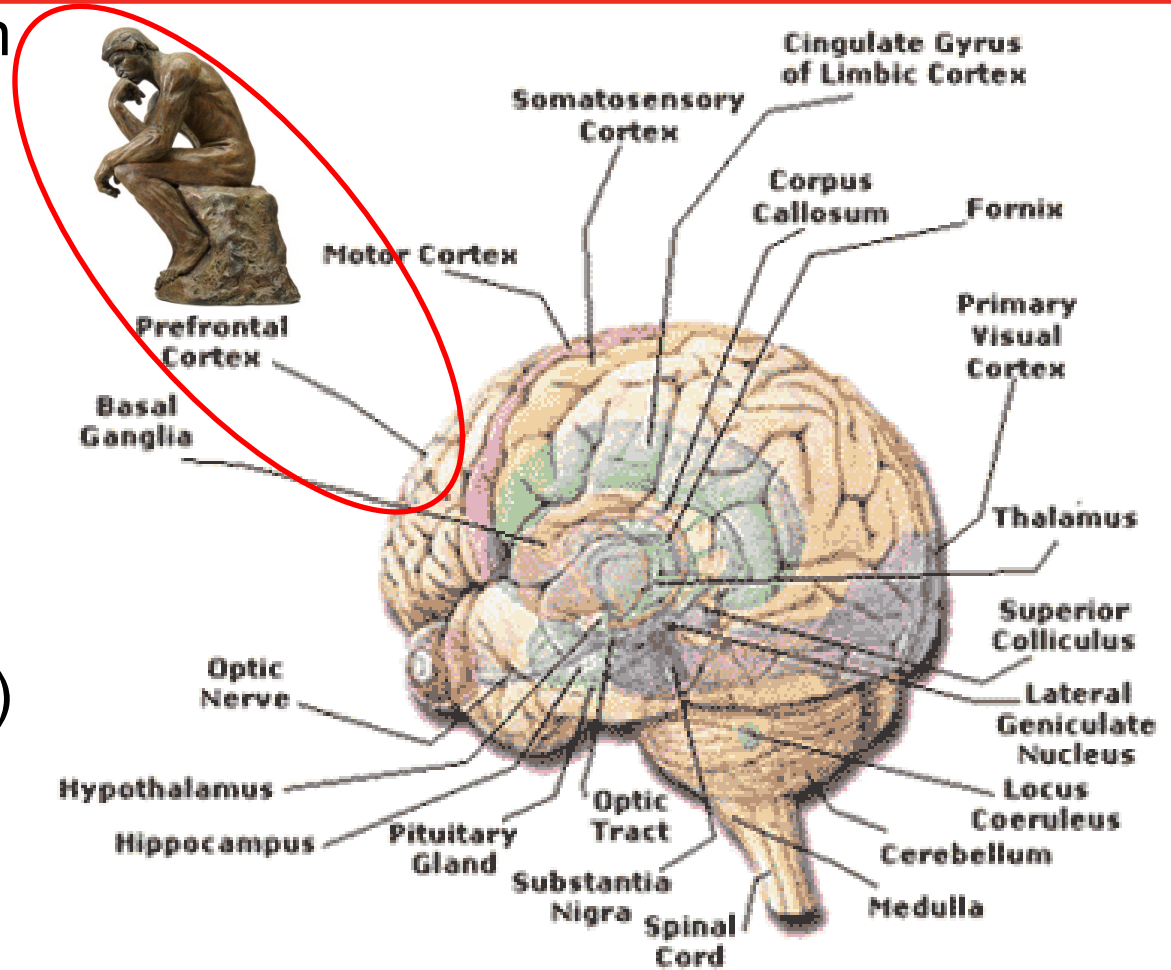


- Starts in the back of the brain (occipital lobes), cascades forward like an inverted 'U'.
- Prefrontal Cortex is the last thing to be myelinated.
- Process not completed until approx 25





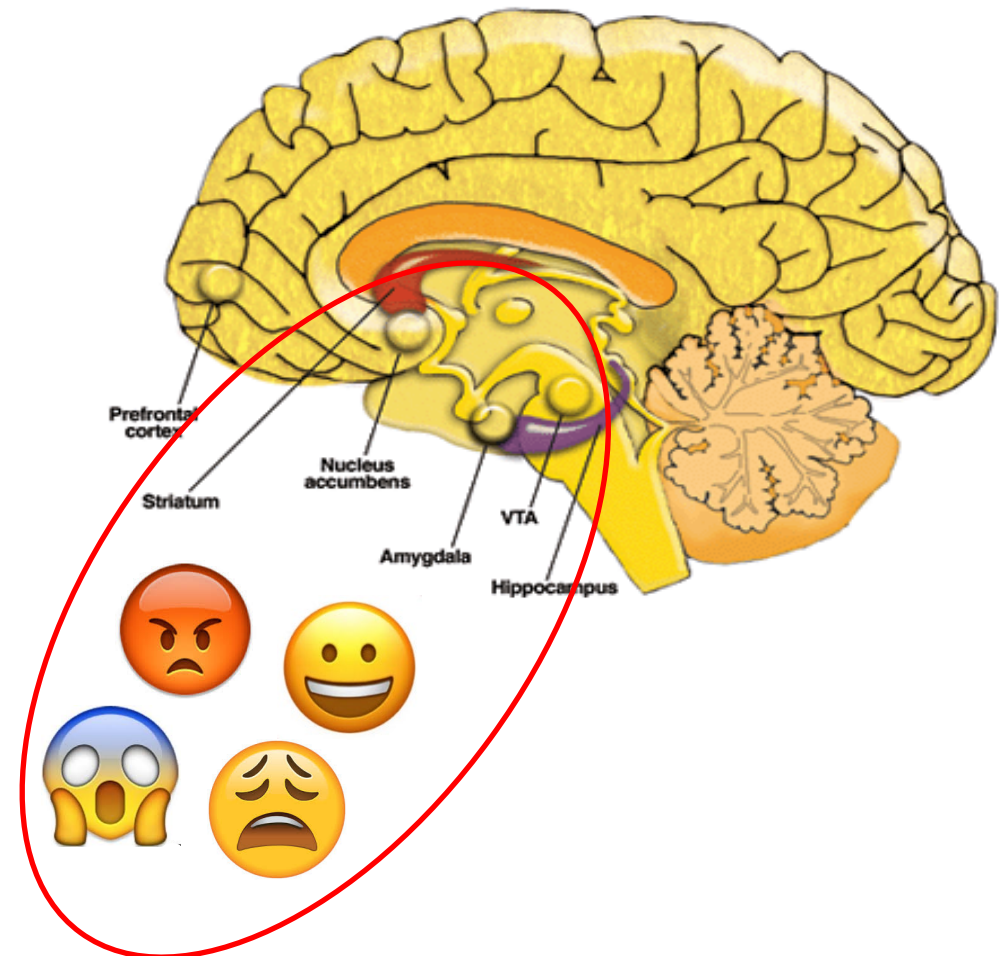
- Executive decision making
- Planning (2nd and 3rd order effects)
- Judgement
- Empathy (understanding from someone else's perspective)
- Impulse control
- **So what?**



- **So what?**
 - What were you thinking? They weren't.
 - Self centred (selfish); its all about them; they don't see the staff point of view; bullies don't see victims perspective
 - Consequence based punishment; often they don't consider 2nd and 3rd order effects (consequences) – 'It's not fair'.
- **Potential strategies**
 - In lectures about values and ethics: structure learning to be from their own perspective, not 'how it feels to be someone else'.
 - A 40 minute period on rules or expected behaviour won't be enough to moderate behaviour.



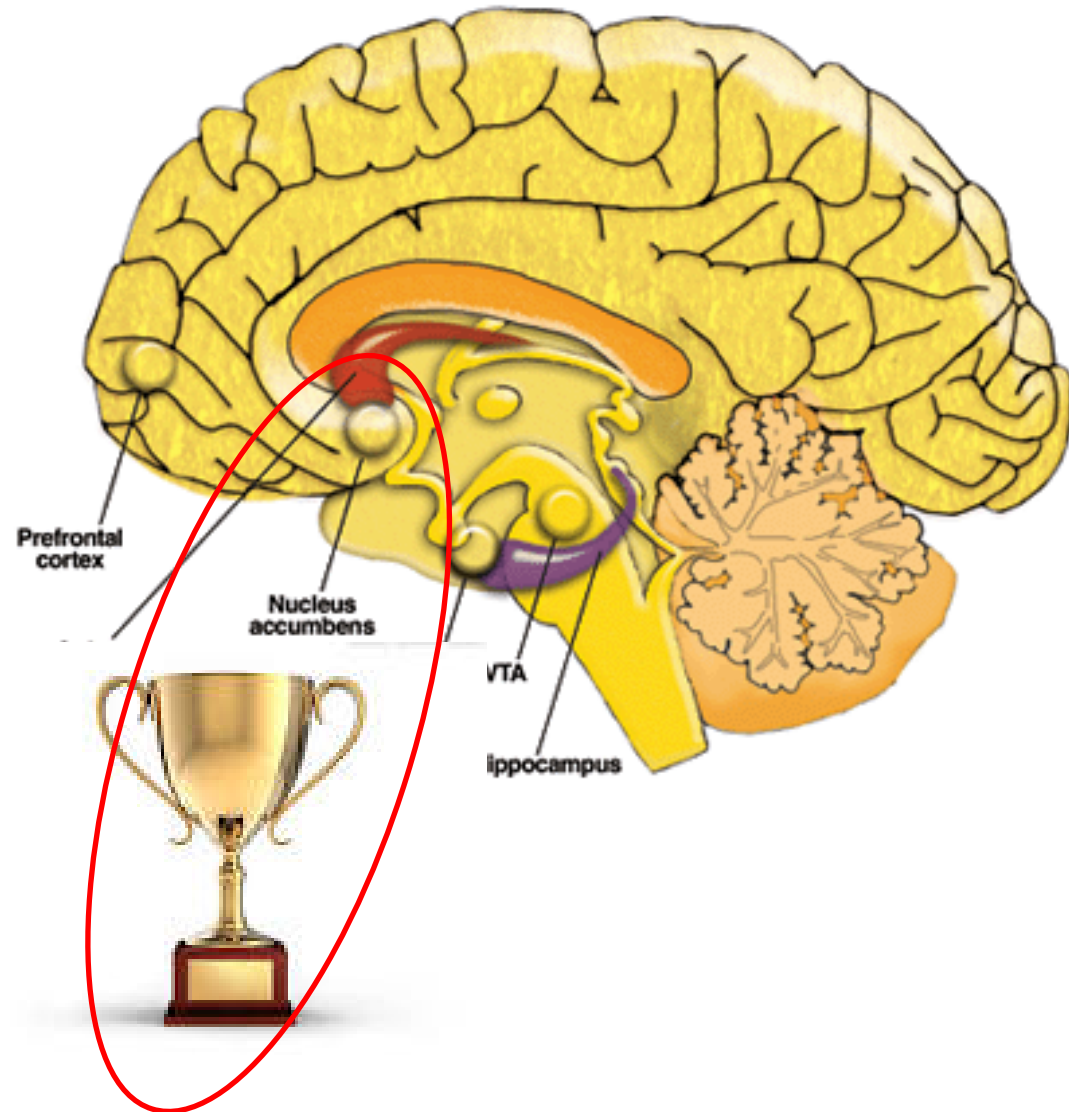
- Emotion
- Sensory input
- Threat detection (relationship to Thalamus and Hypothalamus)
- Fight or flight
- Fully myelinated in adolescents (broadband)
- **So what?**



- **So what?**
 - Amygdala is fully myelinated, so it can send and receive more signals than the Prefrontal Cortex; it can hijack executive decision making when there is emotion or threat involved.
 - Learning is reduced in periods of high stress.
 - Lying may be a fear response where the Amygdala hijacks the Prefrontal Cortex; they are not 'out of step with Defence values' they are just immature and fearful. The military environment gives them a lot to be fearful of.
- **Potential strategies**
 - If you want rational thought and learning, remove the emotion (What are you going to do now Platoon Commander?)
 - If you are in a situation where you need the truth, remove the threat.
 - Military questioning technique (question, pause, nominate) can be threatening. Let them discuss in small groups and provide a group response; 'We think' is less risky than 'I think'.



- Pleasure Centre
- Exaggerated response to reward stimuli in comparison to children and adults
- **So what?**

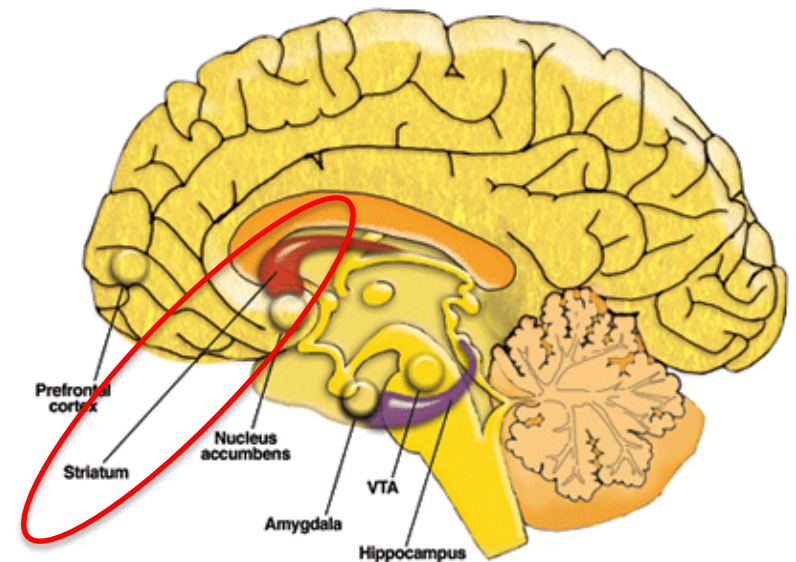




Nucleus Accumbens

- **So what?**
 - Adolescents are reward driven
 - What do they value (what is their reward currency)?
 - Extrinsic rewards (getting something from 'outside') not intrinsic rewards (internal to themselves, joy of doing). This is very different to adult learning.
 - Short term / immediate rewards (not 'you will be an officer in four years')
 - Peer status
- **Potential strategies**
 - Rewarding the behaviour you want to see is much more effective than punishing the behaviour you don't want to see.
 - Elevate their peer status (look at our uniforms! Karate belts, cubs, scouts, happy stamps, name tags, allocated car parks, issue of accoutrements. *A soldier will fight long and hard for a bit of coloured ribbon* – Napoleon Bonaparte)
 - Give praise often (you are not handing out VCs)
 - Turn poor performance into an opportunity for positive reinforcement through a roadmap to recovery (people need to be held to account for their actions, but consider whether you want punishment, or behaviour modification).
 - Consider, how could we use this knowledge in workforce management ie. Money is not the only extrinsic motivator to influence retention. How could peers status be used as a recruiting strategy ie. image of a young recruit posting a picture of graduation on Facebook and receives hundreds of 'likes'.
 - Why don't we analyse workforce demographics by age group in recognition of different motivation? Eg. Exit surveys, PULSE surveys, YourSay data.

- Rewards adolescents with dopamine for participating in novel activity in the presence of their peers
- Novel: sex, driving, alcohol, drugs, unacceptable and risky behaviour
- This is not new, it is not unique to 'Y Gen' or Millennials.
- **So what?**



- **So what?**
 - Adolescents in a group is a high risk environment. Driving experiment example (would you recommend displaying P-Plates?)
 - Education by itself is not enough to change or moderate risk taking or unacceptable behaviour.
 - Maturity (myelination) can't be learnt. It is a biological process.
 - 'Testing' their self-discipline at this age is high risk, it is like asking a 10 year old to bench press 80kg – you can teach them how, but they just don't have the muscles.
- **Potential strategies**
 - Supervise and mentor to protect them from themselves and each other.
 - They need boundaries and these boundaries must be policed (don't trust their ventral striatum)



Army

Healthy brains need healthy bodies

- Aerobic fitness and good nutrition increases the flow of oxygenated blood to the brain, increases neurogenesis (production of new brain cells) and improves cognitive ability.
- Exercise helps regulate the release of serotonin, dopamine and norepinephrine that are all associated with mental health and resilience.
- A lack of fitness increases the chance of mental health problems like depression.
- Adolescents need more sleep than adults (9 hrs and 15 min vs 8 hours) and have a different circadian rhythm; they are not actually ready to wake up until 8-9 o'clock.
- **Potential strategies**
 - Rehab should focus on treating more than the physical injury, keep the aerobic fitness up.
 - Don't program high cognitive activity prior to 0900 hrs.

- Learning requires effort / energy
- Motivation is the fuel to learn
- Previous reviews into ADFA had identified low levels of trainee motivation.
- Studies into motivation have suggested a strong relationship between the supportive nature of the environment, the trainee's sense of value, and the trainee's expectation of success.

| | | Unsupportive environment | | Supportive environment | |
|--|-------------|--------------------------|------------------|------------------------|------------------|
| Student's sense of value is: | | Don't see value | See Value | Don't see value | See Value |
| Students expectation of achievement is: | Low | Rejecting | Hopeless | Rejecting | Fragile |
| | High | Evading | Defiant | Evading | Motivated |

Recreated from Ambrose, Lovett, DiPietro, Norman How learning works, 7
 Research-based Principles for Smart Teaching 2010

•Potential strategies

- In Training Establishments consider removing direct commander from discipline process ('support' means to 'champion for', not discipline or charge)
- Give the reason for learning real meaning (for a self-centred adolescent)
- Set realistic goals

- Factually incorrect prior knowledge can be a persistent barrier to learning new and correct knowledge.
- Much of what people ‘know’ about military service is wrong.
- Hollywood stereotypes:
 - ‘You have to respect the rank, but not the person’ – Band of Brothers
 - Respect is one of Army’s core values, it should be given freely to everyone.
 - ‘The purpose of military training is to weed out the weak’ – Full Metal Jacket
 - DTR’s are based on Army’s capability requirement. The purpose of training is for everyone to pass.
- To get them to live Defence values, you must address the factually incorrect prior knowledge (and remember, it is persistent).
- **Potential strategies**
 - Conduct lessons to deconstruct Hollywood ie. How does that scene represent Army’s values? Rewrite the script to play out what it should look like.
 - Highlight that Army values diversity: We need people who are strong and can carry heavy packs – we also need people with brains the size of planets who can fix the avionics in an ARH or fight a cyber war (and we don’t really care how many push-ups they can do).
 - Remind them, everyone has strengths and weaknesses. Predators target weakness, your job as a leader is to find and harness the strength in others.



Adult vs Adolescent Learning

| Adult Learning (Knowles, 1980) | Adolescent Learning (Kilpatrick) |
|---|--|
| Adults need to know the reason for their learning | 'Motivation' is the key to learning and it is only achieved when students value what is being taught, have a high expectation of success, and are provided with a supportive environment |
| Adults can draw upon experience to aid their learning | Adolescents favour short term extrinsic rewards, and in comparison to children and adults they have an exaggerated pleasure response to things they find rewarding |
| Adults need to be involved in planning their education and evaluation | Adolescents place significant value on status with their peers. Losing peer status is a significant threat that can paralyse learning, gaining peer status is significantly rewarding. |
| Adult readiness for education was linked to changes in their social roles | Prior learning based on stereotypes and incorrect facts is a barrier to new and correct learning. Incorrect prior learning can be persistent, even in response to positive corrective action |
| Adults want to apply new learning in problem solving immediately | Adolescents have difficulty considering second and third order effects, they lack impulse control, an understanding of risk, and are drawn towards novel activities; particularly in the presence of their peers. Accordingly, the application of consequences or punishment for bad behaviour is likely to be less effective than the preventative mechanisms associated with supervision, guidance and mentorship. |
| | Supportive and controlled emotional environments promote adolescent learning, and any emotion can hijack rational thought |
| | Adolescents have a reduced capacity for empathy and accordingly have difficulty viewing a situation from any perspective other than their own. Learning should be shaped from their own perspective, not how it 'feels' to be someone else. |
| | Physical fitness improves cognitive ability and mental health |
| | Adolescent behaviour is not necessarily predictive of future adult performance. Much like physical maturity, maturity of the brain is a biological process that can't be accelerated through education. However, establishing the right foundations and neural pathways during adolescence may shape future adult behaviour. |



Watch this presentation again at the Cove:

<https://www.youtube.com/watch?v=U0Pq4pvgvEo>