COGNITIVE PROCESSING IN THE DIGITAL WORLD (HL)

Digital technology and cognitive skills

Positive effects of video games:

- hand-eye coordination
- reaction time
- spatial visualisation
- mental rotation

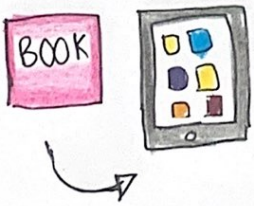
Rosser et al. (2007)

Negative effects of video games:

- addiction to technology
- reduced judgement and decision making abilities.
- aggressiveness
- pro-social behaviour decrease
- lower grades at school

Induced media multi-tasking

- People generally have the urge to switch to their social media apps while doing other important work.
- emotional gratification that students/ people receive from comments, photos etc. can be a reason for this switch.



Solution for multi-tasking:

metacognitive strategies

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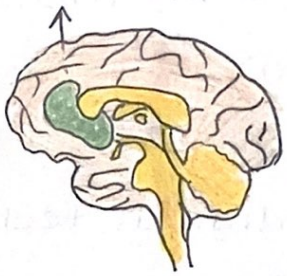
the ability to consciously monitor & regulate cognitive processes.

- we can consciously counterbalance the automatic tendency of getting distracted by regulating the time of the response.

Neurological correlates of media multitasking - (Loh & Kanai)

Anterior cingulated cortex (ACC)



- ACC is known to be involved in cognitive control.
- Individuals who reported higher amounts of media-multitasking had smaller grey matter density in the ACC.
- It is also linked with motivation and emotion processing.
- OCD, PTSD and Depression - reduced ACC volumes.

Digital technology and empathy in human interaction. - Carrier et al (2015) ✓

- Processing of emotional information is linked to empathy.

Empathy

Cognitive

- ability to take perspectives and understand what others feel.

emotional

- emotional component is "feeling along" with them.

- Research has shown a decline in empathy scores for the latest generations of people.

Possible explanations:

- lack of non-verbal clues while communicating online.
- texts lack emotional information like gestures, expressions etc.

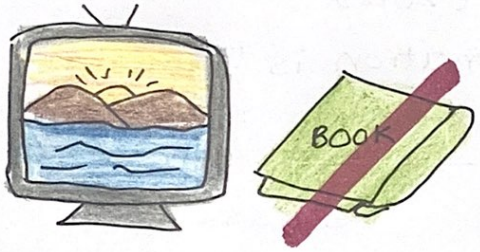
- negative effects of digital technology on empathy should be attributed to activities that aren't face-to-face communication.

- However, online communication for supporting existing friendships has shown positive results.

Digital technology and attention deficit hyperactivity disorder.

- digital technology might be responsible for increased rates of attention deficit hyperactivity disorder (ADHD).

- television & games involve rapid changes in stimuli and don't prepare children for "less exciting" materials such as academics.



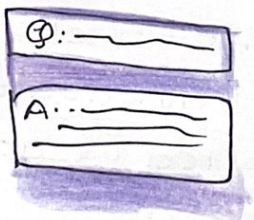
Swing et al (2010)

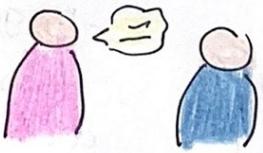
Methods used to study the interaction between digital technology and cognitive processes.

- researches should be conducted in real life settings. – surveys, structured naturalistic observations or experience sampling method.

- supplemented by experiments – allows researchers to make cause-effect inferences.

- to bring in more variables - correlational studies and brain imaging methods.





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