4.2 HL: technology and behaviour

Name: _____ Class: _____ Date: _____ **Total: 30 marks**

KEY WORDS effect size • correlation • replication • working memory • Google effect

Objective

Build the skills to answer HL questions on **technology** and behaviour: social media and well-being, smartphones and attention, technology and memory, and how to judge claims about technology from the evidence.

You must be able to:

- describe Orben and Przybylski (2019) and explain what a small effect size means
- describe Ward et al. (2017) and explain why replication matters
- explain the Google effect (Sparrow et al., 2011)
- evaluate claims about technology with causality and measurement

1 Key knowledge and worked examples

The evidence

- **Social media and well-being:** Orben and Przybylski (2019) analysed three large data sets with more than **350,000** teenagers. Technology use had a negative link with well-being, but it explained **at most 0.4 %** of the differences in well-being, about as much as eating potatoes. The data were **correlational**: unhappy teenagers may also use more social media.
- **Smartphones and attention:** Ward et al. (2017) gave students working-memory tests with their phone on the desk (face down, silent), in a bag, or in another room. They did best with the phone in **another room**, even without using it. Later studies did not always find the effect, so wait for **replications** before changing rules.
- **Technology and memory:** Sparrow et al. (2011): people remember **where** information is stored rather than the information itself when they expect to find it online (the Google effect).

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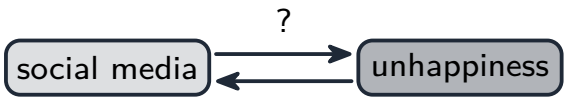
■ **Judging claims**

question	example
cause or correlation?	screen time and unhappiness move together, but which causes which?
how big is the effect?	a statistically significant effect can be tiny in a huge sample
how was it measured?	self-reported hours of use are often inaccurate
has it been repeated?	a single striking study may not replicate

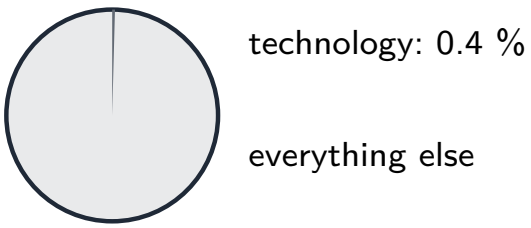
Context: in 2021 China limited online games for under-18s to one hour on Friday, Saturday and Sunday evenings and on public holidays: a policy based on claims about technology, motivation and culture.

2 Practice

2.1 Explain why correlational data cannot show that social media causes unhappiness. [2]



2.2 Orben and Przybylski (2019) found that technology use explained at most 0.4 % of the differences in teenagers' well-being. Explain what this means for the claim that social media makes teenagers unhappy. [3]

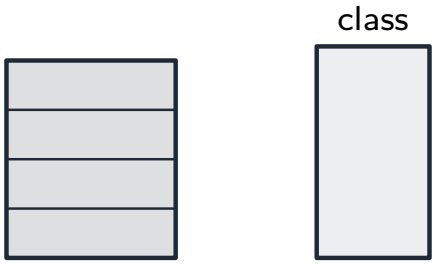


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2.3 *(Section A style.)* Describe **one** study of how smartphones affect cognition. [4]



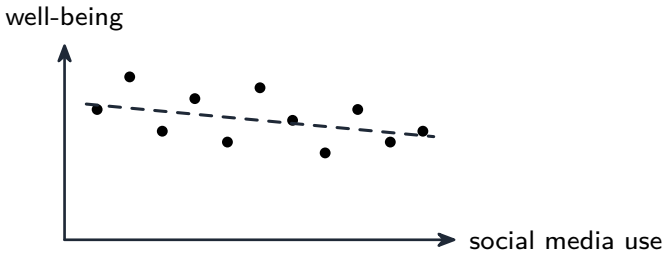
2.4 *(Section B style.)* A school plans to ban phones from classrooms to improve learning. Using research, explain whether this plan is likely to help. [6]



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3 Exam-style questions

3.1 *(Section C style.)* "Social media harms teenagers' well-being." Evaluate this claim with reference to the concept of **causality**. [15]



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