Exercise walk-through

1.2

Optional themes: knowledge and technology, knowledge and language

International Baccalaureate · IB Diploma · Theory of Knowledge

The essay on a prescribed title

- Unpack: an expert is a person with training who is trusted by a community; "important" can mean useful, or necessary.
- Natural sciences: peer review by experts catches mistakes before results are accepted.
- **Counterclaim**: experts rejected Marshall's evidence for years; in the end the evidence, not the experts' opinion, decided.

Sources for this lesson

- International Baccalaureate, *__Theory of Knowledge__ guide* (first assessment 2022), including the specimen prescribed titles and the 35 __exhibition__ prompts.
- International Astronomical Union, Resolution B5, "Definition of a Planet in the Solar System" (24 August 2006).
- B. Marshall and J. R. Warren, "Unidentified curved bacilli in the stomach of patients with gastritis and peptic ulceration", *The Lancet* (16 June 1984), and the Nobel Prize in Physiology or Medicine 2005.

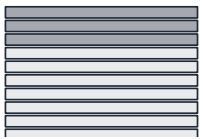
Key terms

- **Knowledge question**: an open, general question about knowledge itself, not about the subject matter.
- **Perspective**: the point of view, shaped by language, culture, education and interests, from which a knower sees.
- **Confirmation bias**: noticing evidence that supports what we already believe and ignoring the rest.

Exercises 2.1·2.2

2.1 Explain how technology can **extend** human knowledge, with **one** example. [2]

2.2 A search engine shows 10 results on the first page; a study finds about 90 % of clicks go to the first page. Explain what this means for **who decides** what we know, and suggest **one** safeguard. [3]



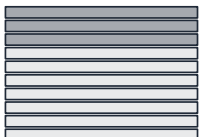
Exercises 2.1·2.2

2.1 Explain how technology can **extend** human knowledge, with **one** example. [2]

2.1

technology lets us observe or calculate beyond the limits of human senses or minds; e.g. telescopes reveal distant galaxies / microscopes show cells / computers model climate

2.2 A search engine shows 10 results on the first page; a study finds about 90 % of clicks go to the first page. Explain what this means for **who decides** what we know, and suggest **one** safeguard. [3]



2.2

most people see only what the ranking algorithm puts first; so the designers of the algorithm and commercial interests shape knowledge for millions; safeguard, e.g. checking several sources; comparing search engines; transparency about ranking

Exercises 2.3·2.4

2.3 Explain the **Sapir–Whorf hypothesis**, and the difference between its strong and weak forms. [4]

2.4 Evaluate the claim that knowledge produced by AI is less trustworthy than knowledge produced by humans. [6]

Exercises 2.3·2.4

2.3 Explain the **Sapir–Whorf hypothesis**, and the difference between its strong and weak forms. [4]

2.3

the idea that the language we speak influences how we think; strong form: language determines thought; we cannot think what our language cannot say; weak form: language influences perception and memory in some ways; evidence: most linguists reject the strong form; some studies (e.g. Russian blues) support a weak form

---

2.4 Evaluate the claim that knowledge produced by AI is less trustworthy than knowledge produced by humans. [6]

2.4

for: AI can produce confident errors and is often not explainable; bias from training data; against: AI can match or beat experts in some tasks, e.g. AlphaFold; humans also have biases and errors; trust depends on testing and track record, not on who produced the claim; a reasoned judgement

Exercise 3.1

3.1 *(Essay-style.)* "Language does not just describe knowledge; it shapes it." Discuss with reference to **one** optional theme and **one** area of knowledge. [10]



Exercise 3.1

3.1 *(Essay-style.)* "Language does not just describe knowledge; it shapes it." Discuss with reference to **one** optional theme and **one** area of knowledge. [10]



3.1

Mark with the TOK markbands (out of 10): [9-10] excellent: clear, focused, convincing links, well-chosen examples, implications explored; [7-8] good: focused, mostly clear links, relevant examples; [5-6] satisfactory: some focus, links partly explained; [3-4] basic: limited links, description more than analysis; [1-2] rudimentary. Points that may be included: clear understanding of the claim; example from language: categories, framing, translation; example from an area of knowledge, e.g. scientific terms, historical labels ("discovery" of America); counter-claim: reality constrains language; translation is possible; evaluation of the counter-claim; implications for how we know

Exercise 3.2

3.2 Explain how **loaded language** can affect knowledge in news reports, with an example. [5]

Exercise 3.2

3.2 Explain how **loaded language** can affect knowledge in news reports, with an example. [5]

3.2

loaded language carries emotional or evaluative meaning; example pair, e.g. “freedom fighter” / “terrorist”, “protest” / “riot”; it shapes how readers judge events before they see evidence; it reflects the perspective of the writer; readers can compare reports to notice it