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Analyze 5 dichotomy of inductive and deductive reasoning

1. Direction of Reasoning

Inductive: Drawing from specific instances, arriving at a generalization.

Deductive: From a universal statement to a particular conclusion.

Example:

Inductive : “I’ve noticed many Chinese classes using characters and tones, so Chinese as a subject likely places a lot of emphasis on memorization.”

Deductive: All courses with tones require listening practice; Chinese has tones; thus Chinese requires listening practice.

2. Type of Conclusion

Inductive: The conclusion is likely, but not certain.

Deductive: A conclusion must always be correct given the premises, provided the premises are true.

Example:

Inductive: Most Ghanaian students studying abroad say it’s life-changing… so if I go, I’ll likely gain new opportunities.

Deductive: All scholarships reduce the cost of education. I have a scholarship. The cost of education will be reduced.

3. Use of Evidence

Inductive: It is observational, pattern, and experience-based.

Deductive: It depends on established laws, principles, or rules.

Example:

Inductive: Observing personal friends' success with the use of AI tools → inferring AI increases productivity.

Deductive: If the rule states, "AI reduces the workload," then "using AI reduces the workload."

4. Nature of Arguments

Inductive Arguments are open and can be changed if new information becomes available.

Deductive: The arguments are closed, which means the conclusion itself cannot be changed nor altered by the

Example:

Inductive: "The more practice I get in C++, the easier it seems... so maybe programming gets easier with repetition."

Inductive: " All programming languages need logic, C++ is a programming language, so C++ needs logic."

5. Purpose in Thinking

Inductive: Employed in exploring, idea generation, theory building, and making predictions.

Deductive: Used for testing hypotheses, validating theories, and verifying truths.

Example:

Inductive: There is a pattern to observe in the number of applications built with Flutter, so the conclusion that it is getting popular must come out.

Deductive: "If any popular framework increases job opportunities, then Flutter increases job opportunities."