



Unit 3: AI Prompt Orchestration (Knowledge Validation & Stress Testing)

3.1 The Journey from an Initial Knowledge Claim to a Robust Knowledge Claim

- *Why knowledge must be validated before it is accepted*
- *From explanation to justified understanding*
- *AI as a critical thinking partner, not an answer provider*
- *The role of the learner as the knowledge validator*

3.2 Activating AI for Epistemic Validation

- *Beginning the validation process*
- *Using AI to challenge rather than confirm*
- *Designing prompts that test the knowledge claim*
- *Moving beyond confirmation to critical evaluation*

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- *Revising explanations*

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3.12 Constructing the Robust Knowledge Claim (RKC)

- *What is a Robust Knowledge Claim?*
- *Characteristics of a strong RKC*



- *Writing a critically validated explanation*
- *Why every RKC remains open to future refinement*

3.13 Reflection: How Has My Knowledge Become Stronger?

- *Comparing the IKC with the RKC*
- *What changed during validation?*
- *What evidence changed my thinking?*
- *Remaining uncertainties*
- *Preparing for knowledge transfer and application*

3.1 The Journey from an Initial Knowledge Claim to a Robust Knowledge Claim

By the end of Unit 2, learners have transformed a Refined Inquiry Question (RIQ) into an Initial Knowledge Claim (IKC) through systematic investigation. They have explored existing knowledge, established conceptual foundations, gathered evidence, examined assumptions, considered multiple perspectives, and organised their understanding into an evidence-informed explanation. The IKC represents the learner's best current understanding based on the available evidence.

However, constructing knowledge is not the end of inquiry. An explanation may appear convincing, yet still contain weaknesses. The evidence may be limited, important perspectives may have been overlooked, and hidden assumptions or biases may still influence reasoning. Before any explanation can be accepted with confidence, it must first be carefully examined, challenged, and justified. This is where Unit 3 begins.

Instead of asking, "What is my best explanation?", the learner now asks, "How well does my explanation survive critical examination?" This marks the transition from knowledge construction to knowledge validation, where the goal is no longer simply to explain, but to justify why the explanation deserves confidence.



3.2 Activating AI for Critical Evaluation

At this stage, Artificial Intelligence is activated as a critical thinking partner, not as an investigation partner. In Unit 2, AI helped learners gather information and organise knowledge. In Unit 3, AI helps learners question their own conclusions, identify weaknesses, uncover missing evidence, expose hidden assumptions, compare competing viewpoints, and test the strength of their reasoning.

Rather than asking AI to confirm their explanation, learners design prompts that deliberately challenge it. AI becomes a tool for intellectual scrutiny rather than intellectual comfort. Throughout this process, the learner remains responsible for every judgement, decision, and conclusion.

3.3 Evaluating Evidence Reliability

Every knowledge claim depends upon the quality of the evidence supporting it. Learners examine whether their evidence is consistent, dependable, and sufficient to justify the explanation they have constructed. They investigate whether similar studies reach similar conclusions and whether the available evidence provides enough support for the claim.

By the end of this stage, learners recognise that stronger knowledge is built upon stronger evidence, not simply larger quantities of information.

Keywords: Reliability • Consistency • Replicability • Corroboration • Triangulation • Sufficiency

3.4 Examining Source Credibility



Reliable evidence must also come from credible sources. Learners evaluate the authority, accuracy, transparency, currency, and trustworthiness of every source supporting their knowledge claim. They distinguish peer-reviewed research, expert publications, and reputable organisations from unsupported opinions or unreliable information.

By the end of this stage, learners understand that the quality of a knowledge claim depends greatly upon the quality of the sources from which it is constructed.

Keywords: Authority • Accuracy • Transparency • Currency • Objectivity • Peer Review

3.5 Detecting Bias

Every investigation may be influenced by hidden bias. Learners identify personal, cultural, institutional, methodological, and algorithmic biases that may have shaped the evidence or influenced their interpretation of it. They also examine confirmation bias, recognising the tendency to search only for evidence that supports existing beliefs.

By becoming aware of bias, learners develop greater objectivity, intellectual honesty, and openness to changing their thinking when stronger evidence emerges.

Keywords: Bias • Confirmation Bias • Researcher Bias • Cultural Bias • Algorithmic Bias • Reflexivity

3.6 Challenging Through Alternative Perspectives

Strong knowledge is strengthened by considering viewpoints beyond one's own. Learners deliberately examine how different stakeholders, cultures, academic disciplines, and experts may interpret the same evidence differently. They compare



competing perspectives and recognise that complex issues rarely have a single explanation.

This broadens understanding and encourages learners to construct explanations that are balanced, inclusive, and intellectually responsible.

Keywords: Counterargument • Counterclaim • Stakeholders • Perspectives • Worldview • Inclusivity

3.7 Evaluating Confidence, Certainty and Limitations

Not every explanation deserves the same level of confidence. Learners distinguish between confidence, which is supported by evidence, and certainty, which is rarely absolute. They identify the limitations, scope, and unanswered questions within their explanation while recognising where uncertainty still remains.

By the end of this stage, learners understand that acknowledging limitations strengthens a knowledge claim rather than weakening it.

Keywords: Confidence • Certainty • Limitation • Scope • Generalisability • Uncertainty

3.8 Applying Falsification

One of the strongest ways to test a knowledge claim is to actively search for evidence that could challenge or disprove it. Learners investigate contradictory findings, conflicting evidence, and situations where their explanation may not hold true. Rather than defending their original conclusion, they deliberately test its resilience.



If the explanation continues to withstand these challenges, it becomes more robust, more reliable, and more worthy of confidence.

Keywords: Falsification • Refutation • Testability • Prediction • Robustness • Revision

3.9 Examining Ethical Implications

Knowledge should not only be accurate but also responsible. Learners examine the ethical implications of their explanation by considering who benefits, who may be harmed, whose voices may be missing, and what responsibilities arise when knowledge is applied in the real world.

This encourages learners to recognise that every knowledge claim carries ethical consequences beyond intellectual understanding.

Keywords: Ethics • Responsibility • Fairness • Harm • Beneficence • Justice

3.10 Evaluating Logical Coherence

Strong evidence alone is insufficient if the reasoning connecting it to the conclusion is weak. Learners examine whether their explanation follows logically from the evidence, identify unsupported assumptions, recognise logical fallacies, and eliminate contradictions within their reasoning.

By the end of this stage, learners ensure that every conclusion is supported by clear, coherent, and logically consistent reasoning.

Keywords: Logic • Coherence • Consistency • Inference • Fallacy • Justification



3.11 Revising and Refining the Knowledge Claim

Validation is not about defending the first explanation. It is about improving it. Learners revise their Initial Knowledge Claim by incorporating stronger evidence, correcting weaknesses, acknowledging limitations, strengthening justification, and integrating broader perspectives. Reflection becomes an opportunity for improvement rather than self-defence.

By the end of this stage, the explanation becomes clearer, more balanced, and more intellectually robust.

Keywords: Revision • Refinement • Improvement • Reflection • Adaptation • Epistemic Humility

3.12 Constructing the Robust Knowledge Claim (RKC)

The Robust Knowledge Claim (RKC) represents the learner's strongest justified explanation after systematic validation and refinement. It is supported by credible evidence, strengthened through critical evaluation, tested against alternative perspectives, refined through logical reasoning, and informed by ethical reflection. Although more trustworthy than the Initial Knowledge Claim, it remains open to future revision as new evidence and new perspectives emerge.

The journey from an Initial Knowledge Claim (IKC) to a Robust Knowledge Claim (RKC) is therefore the journey from explanation to justified understanding. Learners discover that robust knowledge is not created by defending their first answer, but by continuously questioning, testing, refining, and strengthening their thinking.

Keywords: Robust Knowledge Claim • Validation • Justification • Defensibility • Robustness • Refinement



For **Unit 3**, the keywords should shift from the vocabulary of **knowledge construction** (Unit 2) to the vocabulary of **knowledge validation, robustness, and epistemic judgement**. The glossary should teach learners the language they need to test, challenge, validate, and refine knowledge.

3.1 The Journey from an Initial Knowledge Claim to a Robust Knowledge Claim

Keyword	Simple Meaning	Mindgleian Example
Initial Knowledge Claim (IKC)	Your best current explanation based on the evidence gathered so far.	The learner concludes that restorative practices appear more effective than punishment in reducing bullying.
Robust Knowledge Claim (RKC)	A knowledge claim that has been critically tested, validated, and strengthened.	After examining counterarguments, stronger evidence, and limitations, the learner refines the explanation into a more defensible claim.
Knowledge Validation	The process of testing whether a knowledge claim deserves confidence.	The learner checks whether the explanation remains convincing after examining contradictory evidence.
Epistemic Validation	Systematically examining whether knowledge is justified, reliable, and well supported.	The learner evaluates evidence, reasoning, perspectives, and assumptions before accepting the claim.
Critical Evaluation	Judging the strengths and weaknesses of a knowledge claim using evidence and reasoning.	The learner compares different explanations before deciding which is best supported.
Justified Understanding	An explanation supported by strong evidence, logical	Instead of saying, "I think this is true," the learner explains why



Keyword	Simple Meaning	Mindgleian Example
	reasoning, and careful evaluation.	the evidence justifies the conclusion.

3.2 Activating AI for Critical Evaluation

Keyword	Simple Meaning	Mindgleian Example
Validation Partner	AI acting as a tool that helps test and strengthen knowledge rather than simply providing answers.	The learner asks AI to identify weaknesses in the explanation instead of asking if it is correct.
Stress Testing	Deliberately challenging a knowledge claim to discover its strengths and weaknesses.	The learner asks AI to present evidence that disagrees with the original explanation.
Validation Prompt	A prompt designed to test, question, or improve a knowledge claim.	"What evidence contradicts my explanation?"
Epistemic Challenge	A question that tests how well a knowledge claim can be justified.	The learner asks, "How would an expert challenge this conclusion?"
Critical Evaluation	Analysing evidence and reasoning before accepting a conclusion.	AI compares competing explanations and highlights weaknesses in each.
Intellectual Judgement	Making thoughtful decisions after evaluating evidence, reasoning, and perspectives.	The learner decides to revise the explanation because stronger evidence supports an alternative view.

3.3 Evaluating Evidence Reliability

Keywords: Reliability • Consistency • Replicability • Corroboration • Triangulation • Sufficiency



Keyword	Simple Meaning	Mindgleian Example
Reliability	Whether evidence gives consistent results over time.	Several studies on bullying report similar findings, increasing confidence in the evidence.
Consistency	The degree to which different findings agree with one another.	Research from different countries reaches similar conclusions about restorative practices.
Replicability	Whether another investigation would obtain similar results.	A bullying intervention produces similar outcomes when repeated in another school.
Corroboration	Independent evidence supporting the same conclusion.	Interviews, surveys, and research articles all support the learner's explanation.
Triangulation	Using multiple sources or methods to strengthen findings.	The learner combines observations, interviews, and published research before making a claim.
Sufficiency	Having enough evidence to justify a conclusion.	One example is not enough; the learner gathers several reliable studies before drawing a conclusion.

3.4 Examining Source Credibility

Keywords: Authority • Accuracy • Currency • Objectivity • Transparency • Peer Review

Keyword	Simple Meaning	Mindgleian Example
Authority	The expertise of the source.	A research article written by psychologists carries greater authority than an anonymous blog.



Keyword	Simple Meaning	Mindgleian Example
Accuracy	Whether the information is correct and supported by evidence.	The learner checks whether statistics match official reports.
Currency	How up-to-date the information is.	Recent research is preferred when studying cyberbullying.
Objectivity	Presenting information without unfair influence or bias.	The learner compares sources with different viewpoints before drawing conclusions.
Transparency	Clearly explaining how evidence was collected.	The research paper describes its methods openly.
Peer Review	Evaluation of research by experts before publication.	The learner trusts a peer-reviewed journal more than an unverified website.

3.5 Detecting Bias

Keywords: Bias • Confirmation Bias • Researcher Bias • Cultural Bias • Algorithmic Bias • Reflexivity

Keyword	Simple Meaning	Mindgleian Example
Bias	An unfair influence on judgement.	The learner favours evidence supporting punishment while ignoring alternatives.
Confirmation Bias	Looking only for evidence that supports existing beliefs.	The learner ignores studies supporting restorative practices because they already prefer discipline.
Researcher Bias	The researcher's own expectations influencing findings.	The learner questions whether the researcher remained objective.



Keyword	Simple Meaning	Mindgleian Example
Cultural Bias	Judging another culture using one's own cultural beliefs.	The learner realises bullying may be interpreted differently across societies.
Algorithmic Bias	AI producing responses influenced by its training data.	AI repeatedly recommends one viewpoint because similar sources dominate online content.
Reflexivity	Examining how your own thinking influences interpretation.	The learner reflects on how personal experiences shaped the investigation.

3.6 Challenging Through Alternative Perspectives

Keywords: Counterargument • Counterclaim • Stakeholder • Perspective • Worldview • Inclusivity

Keyword	Simple Meaning	Mindgleian Example
Counterargument	A reasoned argument against your explanation.	Another learner argues that discipline is more effective than empathy.
Counterclaim	An alternative conclusion based on different reasoning.	The learner compares punishment-based and restorative approaches.
Stakeholder	Someone affected by the issue.	Students, teachers, parents, and school leaders all experience bullying differently.
Perspective	A particular way of viewing an issue.	A counsellor interprets bullying differently from a policymaker.
Worldview	A broader belief system shaping interpretation.	Different cultures may define discipline differently.



Keyword	Simple Meaning	Mindgleian Example
Inclusivity	Considering voices that are often overlooked.	The learner includes the perspectives of victims, bystanders, and students with disabilities.

3.7 Evaluating Certainty and Limitations

Keywords: Confidence • Certainty • Limitation • Scope • Generalisability • Uncertainty

Keyword	Simple Meaning	Mindgleian Example
Confidence	How strongly the evidence supports a claim.	Several reliable studies increase the learner's confidence.
Certainty	Believing something cannot reasonably be questioned.	The learner avoids claiming absolute certainty because future research may disagree.
Limitation	A weakness in evidence or explanation.	The study only examined urban schools.
Scope	The boundaries of a claim.	The explanation applies only to secondary schools.
Generalisability	Whether findings apply beyond the original study.	The learner questions whether results from one country apply worldwide.
Uncertainty	What is still unknown.	Researchers still debate which intervention works best.

3.8 Applying Falsification

Keywords: Falsification • Refutation • Testability • Prediction • Robustness • Revision



Keyword	Simple Meaning	Mindgleian Example
Falsification	Testing whether a claim can be shown to be wrong.	The learner searches for evidence that challenges restorative practices.
Refutation	Evidence that disproves a claim.	A new study contradicts the learner's earlier explanation.
Testability	Whether a claim can be investigated.	The learner asks how the explanation could be tested in schools.
Prediction	What the claim expects to happen if it is true.	If empathy reduces bullying, bullying incidents should decline after the programme.
Robustness	The ability of a claim to withstand challenge.	The explanation remains strong even after conflicting evidence is examined.
Revision	Improving a claim after new evidence appears.	The learner modifies the explanation after analysing stronger research.

3.9 Examining Ethical Implications

Keywords: Ethics • Responsibility • Fairness • Harm • Beneficence • Justice

Keyword	Simple Meaning	Mindgleian Example
Ethics	Thinking about what is right and responsible.	The learner considers whether punishment alone is fair.
Responsibility	Being accountable for how knowledge is used.	School leaders must apply evidence responsibly.
Fairness	Treating people equitably.	Every student's perspective is considered.



Keyword	Simple Meaning	Mindgleian Example
Harm	Possible negative consequences.	A policy may unintentionally increase student anxiety.
Beneficence	Promoting wellbeing through decisions.	The learner recommends interventions that improve school climate.
Justice	Ensuring decisions are equitable.	Vulnerable students receive equal protection.

3.10 Evaluating Logical Coherence

Keywords: Logic • Coherence • Consistency • Inference • Fallacy • Justification

Keyword	Simple Meaning	Mindgleian Example
Logic	Sound reasoning connecting evidence and conclusions.	The learner explains why evidence supports the claim.
Coherence	All ideas fit together logically.	Every paragraph supports the same conclusion.
Consistency	Ideas do not contradict each other.	The learner's conclusion matches the evidence presented.
Inference	A conclusion drawn from evidence.	The learner infers that empathy programmes reduce bullying.
Fallacy	An error in reasoning.	The learner avoids assuming that one successful school proves all schools will succeed.
Justification	Explaining why the conclusion deserves confidence.	The learner links evidence, theory, and reasoning together.

3.11 Revising and Refining the Knowledge Claim



Keywords: Revision • Refinement • Improvement • Reflection • Adaptation • Epistemic Humility

Keyword	Simple Meaning	Mindgleian Example
Revision	Changing an explanation after evaluation.	The learner updates the claim after finding stronger evidence.
Refinement	Making the explanation clearer and stronger.	The learner improves wording and justification.
Improvement	Strengthening the quality of the claim.	The explanation becomes more balanced.
Reflection	Thinking about how the explanation has changed.	The learner compares the IKC with the revised version.
Adaptation	Adjusting understanding when new evidence appears.	The learner changes the explanation instead of defending the original claim.
Epistemic Humility	Accepting that knowledge can always improve.	The learner welcomes criticism as an opportunity to strengthen understanding.

3.12 Constructing the Robust Knowledge Claim (RKC)

Keywords: Robust Knowledge Claim • Validation • Justification • Defensibility • Robustness • Refinement

Keyword	Simple Meaning	Mindgleian Example
Robust Knowledge Claim (RKC)	A carefully tested and justified explanation.	The learner presents a claim that has survived critical evaluation.
Validation	Testing whether the claim deserves confidence.	The learner checks whether the evidence still supports the explanation.



Keyword	Simple Meaning	Mindgleian Example
Justification	Providing reasons for accepting the claim.	Every conclusion is supported by evidence and reasoning.
Defensibility	The ability to justify a claim when challenged.	The learner confidently explains why the claim remains convincing.
Robustness	The strength of the claim after scrutiny.	The explanation remains credible despite counterarguments.
Refinement	Continuing to improve knowledge over time.	The learner remains open to revising the RKC if stronger evidence emerges.