## *Unit 2: AI Prompt Orchestration (Knowledge Construction)*

### *2.1 The Journey from a Refined Inquiry Question to an Initial Knowledge Claim*

- *Why inquiry must precede information*
- *From asking a good question to constructing knowledge*
- *AI as an investigation partner, not a thinking substitute*
- *The role of the learner as the knowledge constructor*

### *2.2 Activating AI for Systematic Investigation*

- *Beginning the investigation*
- *Using AI intentionally rather than conversationally*
- *Designing prompts that deepen understanding*
- *Moving beyond answer-seeking to evidence-seeking*

### *2.3 Building Foundational Understanding*

- *What is already known?*
- *Establishing background knowledge*
- *Identifying key ideas and existing explanations*

### *2.4 Establishing the Conceptual Foundation*

- *Identifying concepts*
- *Understanding theories*
- *Exploring models and principles*

- ***Building the language of inquiry***

***2.5 Gathering and Evaluating Evidence***

- ***Searching for supporting evidence***
- ***Distinguishing strong and weak evidence***
- ***Evaluating credibility and reliability***
- ***Evidence versus opinion***

***2.6 Exploring Real-World Contexts***

- ***Case studies***
- ***Real-life examples***
- ***Applications across disciplines***
- ***Connecting theory with practice***

***2.7 Auditing Assumptions***

- ***Identifying hidden assumptions***
- ***Recognising prior beliefs***
- ***Challenging cognitive shortcuts***
- ***Building intellectual humility***

***2.8 Investigating Contradictions and Uncertainty***

- ***Competing findings***
- ***Areas of disagreement***

- ***Limitations of current knowledge***
- ***Why uncertainty strengthens inquiry***

***2.9 Exploring Alternative Explanations***

- ***Considering competing hypotheses***
- ***Looking beyond the first explanation***
- ***Comparative reasoning***
- ***Preventing premature conclusions***

***2.10 Integrating Multiple Perspectives***

- ***Stakeholder perspectives***
- ***Cultural perspectives***
- ***Disciplinary perspectives***
- ***Ethical perspectives***
- ***Systems thinking across viewpoints***

***2.11 Judging the Strength of Knowledge***

- ***Weighing evidence***
- ***Comparing explanations***
- ***Assessing plausibility***
- ***Recognising confidence versus certainty***

***2.12 Synthesising Knowledge***

- ***Connecting concepts, evidence and perspectives***
- ***Constructing coherent explanations***
- ***Reasoning from evidence***
- ***Organising knowledge into understanding***

### *2.13 Constructing the Initial Knowledge Claim (IKC)*

- ***What is an Initial Knowledge Claim?***
- ***Characteristics of a strong IKC***
- ***Writing an evidence-informed explanation***
- ***Why every IKC is provisional***

### *2.14 Reflection: How Has My Thinking Changed?*

- ***Comparing initial assumptions with current understanding***
- ***Identifying remaining knowledge gaps***
- ***Questions for the next stage of inquiry***
- ***Preparing for knowledge validation and refinement***

### 2.4 Establishing the Conceptual Foundation

Facts describe **what** happened, but **concepts, theories, models, and principles** explain **why** and **how** it happened. Learners identify the key concepts, explore relevant theories and models, and build the language needed to think and communicate accurately about their inquiry. By the end of this stage, they possess the conceptual framework required to interpret evidence and construct meaningful explanations.

**Keywords:** Concepts • Theory • Model • Principle • Framework • Inquiry Language

### 2.5 Gathering and Evaluating Evidence

A knowledge claim must be supported by **credible evidence**, not personal opinion. Learners gather information from reliable sources, distinguish strong evidence from weak evidence, evaluate credibility and reliability, and justify why certain evidence is more convincing than others. By the end of this stage, they have an evidence base that can support or challenge possible explanations.

**Keywords:** Evidence • Credibility • Reliability • Validity • Source • Justification

### 2.6 Exploring Real-World Contexts

Knowledge becomes meaningful when it explains the real world. Learners investigate **case studies, real-life examples, and cross-disciplinary applications** to understand how concepts operate in authentic situations. By connecting theory with practice, they recognise that inquiry extends beyond textbooks into everyday life.

**Keywords:** Case Study • Context • Application • Transfer • Real-world • Interdisciplinary

### 2.7 Auditing Assumptions

Every inquiry begins with assumptions that may influence thinking without the learner realising it. Learners identify hidden assumptions, examine prior beliefs, question cognitive shortcuts, and remain open to changing their views when new evidence emerges. This develops **intellectual humility** and reduces bias during knowledge construction.

**Keywords:** Assumption • Prior Beliefs • Bias • Cognitive Shortcuts • Reflexivity • Intellectual Humility

### 2.8 Investigating Contradictions and Uncertainty

Contradictions are opportunities for deeper inquiry rather than obstacles to learning. Learners investigate conflicting evidence, examine competing findings, recognise the limitations of current knowledge, and explore why experts may disagree. By embracing uncertainty, they develop more balanced and robust explanations.

**Keywords:** Contradictions • Uncertainty • Disagreement • Limitation • Complexity • Knowledge Growth

### 2.9 Exploring Alternative Explanations

Strong inquiry considers more than one possible explanation. Learners generate alternative hypotheses, compare competing explanations, evaluate which explanation is best supported

by evidence, and avoid accepting the first answer too quickly. This strengthens reasoning and prevents premature conclusions.

**Keywords:** Alternative Explanations • Hypothesis • Comparative Reasoning • Evaluation • Plausibility

### 2.10 Integrating Multiple Perspectives

Complex issues are understood differently by different people and disciplines. Learners examine **stakeholder, cultural, disciplinary, ethical, and systems perspectives** to develop a broader and more balanced understanding of the inquiry. This helps them appreciate that knowledge is shaped by multiple viewpoints rather than a single perspective.

**Keywords:** Stakeholders • Culture • Ethics • Systems Thinking • Perspectives • Interdisciplinary Thinking

### 2.11 Judging the Strength of Knowledge

Not all explanations deserve equal confidence. Learners weigh evidence, compare competing explanations, assess plausibility, and distinguish **confidence** from **certainty** before deciding which explanation is currently strongest. This ensures that their conclusions are evidence-informed rather than opinion-based.

**Keywords:** Plausibility • Confidence • Certainty • Judgement • Evaluation • Evidence Weight

### 2.12 Synthesising Knowledge

Knowledge is constructed by connecting ideas rather than collecting facts. Learners integrate concepts, evidence, assumptions, contradictions, and multiple perspectives into one coherent explanation using logical reasoning. By the end of this stage, scattered information becomes organised understanding.

**Keywords:** Synthesis • Integration • Reasoning • Patterns • Connections • Coherence

### 2.13 Constructing the Initial Knowledge Claim (IKC)

The **Initial Knowledge Claim (IKC)** is the learner's best current explanation of the inquiry based on the available evidence. Learners communicate their explanation clearly, justify it with evidence, acknowledge limitations, and recognise that it remains **provisional** and open to refinement. The IKC represents the first evidence-informed position in the Mindgle journey.

**Keywords:** Initial Knowledge Claim • Justification • Evidence-informed • Provisional • Explanation

### 2.14 Reflection: How Has My Thinking Changed?

Reflection helps learners evaluate both **what** they learned and **how** their thinking evolved during the inquiry. Learners compare their initial assumptions with their current understanding, identify remaining knowledge gaps, and decide what needs further investigation. This prepares them for the next stage of **knowledge validation and refinement**, where the IKC will be tested and strengthened.

**Keywords:** Reflection • Metacognition • Knowledge Gaps • Self-evaluation • Validation • Refinement

| Keyword | Simple Meaning | Mindgleian Example |
|---|---|---|
| **Concept** | A big idea that helps explain many situations. | While investigating bullying, a learner realises **empathy** is a concept that explains why some interventions work better than punishment. |
| **Theory** | An evidence-based explanation of why something happens. | The learner studies **Social Learning Theory** to understand how children imitate aggressive behaviour. |
| **Model** | A simplified representation used to understand a complex idea. | The learner uses the **Iceberg Model** to see that bullying is caused by hidden beliefs, not just visible actions. |
| **Principle** | A general rule that guides understanding. | The learner discovers the principle that **behaviour is influenced by both the individual and the environment.** |

| Keyword | Simple Meaning | Mindgleian Example |
|---|---|---|
| **Framework** | An organised structure that helps investigate a problem. | The learner uses the Mindgle Inquiry Framework to organise concepts, evidence, assumptions and perspectives. |
| **Inquiry Language** | The vocabulary needed to think and communicate accurately. | Instead of saying "I think this is true," the learner writes, "The evidence suggests..." |
| **Keyword** | Simple Meaning | Mindgleian Example |
| **Evidence** | Information that supports or challenges an explanation. | The learner finds research showing restorative practices reduce repeated bullying. |
| **Credibility** | How trustworthy the source is. | A peer-reviewed journal is more credible than an anonymous social media post. |
| **Reliability** | Whether similar evidence gives consistent results. | Several independent studies report similar findings, increasing reliability. |
| **Validity** | Whether the evidence truly measures or explains what it claims. | A survey measuring empathy should ask about empathy—not academic performance. |
| **Source** | Where the information comes from. | The learner compares information from UNESCO, research journals and news articles. |

| Keyword | Simple Meaning | Mindgleian Example |
|---|---|---|
| **Justification** | The reasons and evidence supporting a claim. | The learner explains why restorative practices are effective by linking evidence, theory and examples. |
| **Keyword** | Simple Meaning | Mindgleian Example |
| **Case Study** | A detailed investigation of one real situation. | The learner analyses how one school reduced bullying through peer mentoring. |
| **Context** | The situation or environment in which something happens. | Bullying may look different in an online classroom than in a playground. |
| **Application** | Using knowledge in a real situation. | The learner applies empathy strategies while resolving a disagreement in class. |
| **Transfer** | Using learning in a new situation. | Skills learned while studying bullying are later applied to resolving workplace conflict. |
| **Real-world** | Situations outside textbooks. | The learner studies actual school policies rather than imaginary examples. |
| **Interdisciplinary** | Combining ideas from different subjects. | The learner explains bullying using psychology, sociology, education and ethics together. |

| Keyword | Simple Meaning | Mindgleian Example |
|---|---|---|
| **Keyword** | Simple Meaning | Mindgleian Example |
| **Assumption** | Something accepted as true without enough evidence. | The learner assumes strict punishment always reduces bullying before checking evidence. |
| **Prior Beliefs** | Ideas you already hold before investigating. | The learner believes social media is the main cause of bullying because of personal experience. |
| **Bias** | A tendency that influences judgement unfairly. | The learner only looks for articles supporting punishment and ignores other evidence. |
| **Cognitive Shortcuts** | Quick mental decisions that simplify thinking. | The learner immediately blames one student without considering the school environment. |
| **Reflexivity** | Examining how your own thinking influences the inquiry. | The learner realises personal experiences are affecting the interpretation of evidence. |
| **Intellectual Humility** | Being willing to change your mind when evidence changes. | After reading stronger evidence, the learner revises the original opinion. |
| **Keyword** | Simple Meaning | Mindgleian Example |

| Keyword | Simple Meaning | Mindgleian Example |
|---|---|---|
| **Contradictions** | Evidence that disagrees with other evidence. | One study supports punishment while another favours restorative practices. |
| **Uncertainty** | Questions that are not yet fully answered. | Researchers still debate which intervention works best in every situation. |
| **Disagreement** | Experts reaching different conclusions. | Psychologists and policymakers recommend different approaches to discipline. |
| **Limitation** | A weakness or boundary in the evidence. | A study only examined one school, so its findings may not apply everywhere. |
| **Complexity** | Many connected factors influencing the same issue. | Bullying involves family, peers, school culture, emotions and social media together. |
| **Knowledge Growth** | Understanding becoming stronger through new evidence. | The learner improves the explanation after discovering additional research. |
| **Keyword** | Simple Meaning | Mindgleian Example |
| **Alternative Explanations** | Other possible ways to explain the same phenomenon. | Instead of blaming poor discipline, the learner also considers peer pressure and family influence. |

| Keyword | Simple Meaning | Mindgleian Example |
|---|---|---|
| **Hypothesis** | A possible explanation waiting to be tested. | "Restorative circles reduce bullying more effectively than detention." |
| **Comparative Reasoning** | Judging which explanation fits the evidence best. | The learner compares punishment-based and empathy-based interventions. |
| **Evaluation** | Judging strengths and weaknesses using evidence. | The learner decides which intervention has stronger research support. |
| **Plausibility** | How reasonable an explanation is based on the evidence. | The empathy-based explanation appears more plausible because multiple studies support it. |
| **Keyword** | Simple Meaning | Mindgleian Example |
| **Stakeholders** | People affected by the issue. | Students, parents, teachers and school leaders all experience bullying differently. |
| **Culture** | Shared beliefs and practices influencing behaviour. | Bullying may be interpreted differently across cultures. |
| **Ethics** | Thinking about what is fair, right and responsible. | Should schools prioritise punishment or rehabilitation? |

| Keyword | Simple Meaning | Mindgleian Example |
|---|---|---|
| **Systems Thinking** | Understanding how connected parts influence one another. | School policies, home life and peer groups together influence bullying. |
| **Perspectives** | Different ways of viewing the same issue. | A victim, teacher and principal may all describe the same incident differently. |
| **Interdisciplinary Thinking** | Combining multiple subjects to explain one problem. | Psychology explains behaviour, sociology explains groups, and ethics guides decisions. |
| **Keyword** | Simple Meaning | Mindgleian Example |
| **Confidence** | How strongly the evidence supports an explanation. | The learner is confident because several reliable studies agree. |
| **Certainty** | Believing something cannot reasonably be questioned. | The learner avoids claiming absolute certainty because new evidence may emerge. |
| **Judgement** | Making a reasoned decision after evaluating evidence. | The learner concludes restorative practices are currently the strongest explanation. |
| **Evidence Weight** | Giving greater importance to stronger evidence. | A large peer-reviewed study carries more weight than one personal story. |

| Keyword | Simple Meaning | Mindgleian Example |
|---|---|---|
| **Keyword** | Simple Meaning | Mindgleian Example |
| **Synthesis** | Combining ideas into one coherent understanding. | The learner connects concepts, theories, evidence and perspectives into one explanation. |
| **Integration** | Linking separate pieces of information together. | Research findings, school examples and theories are woven into one argument. |
| **Reasoning** | Explaining why the evidence supports the conclusion. | The learner clearly explains how empathy leads to reduced bullying. |
| **Patterns** | Repeated relationships found across evidence. | Most successful schools combine empathy with clear discipline. |
| **Connections** | Seeing how ideas influence one another. | School culture influences empathy, which influences behaviour. |
| **Coherence** | Ideas fitting together logically. | Every paragraph of the learner's explanation supports the same central claim. |
| **Keyword** | Simple Meaning | Mindgleian Example |

| Keyword | Simple Meaning | Mindgleian Example |
|---|---|---|
| **Initial Knowledge Claim (IKC)** | The learner's best current explanation based on available evidence. | "Restorative approaches appear more effective than punishment alone in reducing bullying because they build empathy and accountability." |
| **Evidence-informed** | Supported by credible evidence rather than opinion. | Every sentence in the IKC is backed by research or examples. |
| **Provisional** | Open to change if stronger evidence appears. | The learner states that future research may strengthen or modify the explanation. |
| **Explanation** | A reasoned account of why something happens. | The learner explains not only what works, but why it works. |
| **Keyword** | Simple Meaning | Mindgleian Example |
| **Reflection** | Thinking about how your understanding has changed. | The learner compares initial ideas with the final IKC. |
| **Metacognition** | Thinking about your own thinking. | The learner notices that early assumptions influenced the search for evidence. |

| Keyword | Simple Meaning | Mindgleian Example |
|---|---|---|
| **Knowledge Gaps** | Areas where understanding is still incomplete. | The learner realises there is little evidence about cyberbullying in rural schools. |
| **Self-evaluation** | Judging the quality of your own work. | The learner checks whether the IKC is fully supported by evidence. |
| **Validation** | Testing whether the explanation remains supported by evidence. | The learner looks for new studies that either support or challenge the IKC. |
| **Refinement** | Improving the explanation after further investigation. | The learner revises the IKC after discovering stronger evidence or a better theory. |