

Claude 4 Opus chat on: Developing a Hierarchical Outline for a 7000-Word Book Chapter

User:

Teaching the Unknown paper. /

User:

metadata: BB

We are planning a 7000 word book chapter. Attached are the documents we used to submit as an extended abstract to the IACAP conference. Our intention for today is to build a hierarchical outline to the sub-paragraph level (such that we know what claims, warrants, and evidence will be supporting each paragraph, subsection, and section) for the 7000 word book chapter, extending and elaborating on our extended abstract.

The way today is going to work is that I am going to submit this specific prompt to 2 different LLMs. I would like you to pose us *one very specific and pointed question at a time*. We will take both AI's questions and speak to them, then get that conversation diarised. We will return our conversation. Keep asking questions until you are satisfied you know enough to build a 2000 word outline for our 7000 word book chapter. Our intention for you here is to be specific, accurate, and to push back against our claims. Ask us for citations, evidence, and support. (We will be building a zotero library to support this work). When our statements are unclear, push back. When our thinking is fuzzy, push back. We do not need you to compliment our thinking -- we're academics. Instead, ask us pointed questions that force us to understand and clearly articulate our ideas.

(Also, I've attached the symposium instructions, extended abstract, and extended abstract outline to "project knowledge." Please confirm (in a testable way) that you are able to access all three documents at their full length.

To begin, please give me a readback and functionally decompose the task at hand. If I am happy with the process, I'll ask you to ask the first question.

Assistant:

I've received your request to help develop a hierarchical outline for your 7000-word book chapter by asking specific, pointed questions to clarify your thinking. Let me confirm access to your documents and decompose the task.

I have access to three documents:

1. Document 1: "Extended Abstract Outline" - A structured outline for "Teaching the Unknown: Risk and Agency in the Time of AI in the Classroom"
2. Document 2: "Extended Abstract" - The complete extended abstract by Brian Ballsun-Stanton and Jodie Torrington
3. Document 3: "Symposium Instructions" - The call for abstracts and details for the Teaching With and About AI symposium at IACAP/AISB-25

Functional decomposition of the task:

1. I will ask one specific, pointed question at a time about your research
2. You will discuss this question with your colleague(s) and provide a response

3. You will share this conversation with me
4. I will continue asking targeted questions to clarify your thinking, challenge unclear statements, request evidence/citations, and identify gaps in your reasoning
5. This process continues until I have sufficient information to create a detailed 2000-word outline for your 7000-word chapter
6. The outline will be hierarchical down to the sub-paragraph level, specifying claims, warrants, and supporting evidence

My role is not to compliment your work but to help sharpen your ideas through critical questioning. I should push back when your statements are unclear or your thinking needs refinement, and request specific citations and evidence to support your claims.

Is this understanding of the process accurate? If so, I'll proceed with my first question.

User:

metadata: BB

Begin.

Assistant:

My first question: Your abstract introduces the "Rumsfeld Matrix" alongside Transformative Learning Theory as a key theoretical framework, but I'm curious about the specific methodological connection between these frameworks. How exactly did you operationalize the movement from "unknown unknowns" to "known unknowns" in your course design, and what specific indicators or evidence did you collect to demonstrate this epistemological shift in students?

User:

metadata: BB

Assistant:

Thank you for sharing that conversation. Based on your discussion, I'd like to probe deeper into the assessment structure you implemented.

You mentioned that all your assessments were reflections on activities rather than evaluations of students' mastery of AI skills. This seems central to your pedagogical approach. Could you elaborate on the specific design of these reflection assignments? What prompts or frameworks did you provide to students that helped them move from simply describing their experiences to engaging in the metacognitive analysis that you valued? And how did your assessment rubrics reinforce the value of critical reflection over technical success?

User:

metadata: BB

Assistant:

Thank you for sharing that detailed conversation. Your approach to assessment is particularly interesting, and I'd like to explore the tension between risk-taking and institutional requirements further.

You've described creating a pedagogical environment where students could experiment, fail, and reflect without grade penalties, while still operating within the constraints of a pass/fail unit that needed to align with a parent class's assessment structure. This raises an important question:

How might your pedagogical approach transfer to more traditional university contexts with graded assignments and competitive assessment structures? What specific modifications or scaffolds would be necessary to implement this "risk pedagogy" in settings where students' GPAs and future opportunities might depend on their performance?

User:**metadata: BB****Assistant:**

Thank you for sharing these comprehensive conversations. Based on all our discussions, I'd like to focus on one final aspect before I develop the outline for your book chapter.

You've mentioned how this pedagogical approach created a significant shift in students' attitudes toward AI, moving from fear or skepticism to a more nuanced understanding where they could exercise agency. Could you elaborate on the specific indicators or evidence you observed that demonstrated this shift in student agency or what you've called "internal AI-Locus of Control"? What concrete changes in student behavior, language, or approach to AI interactions did you see from the beginning to the end of the course?

pdf

User:**metadata: BB**

Before we answer that, here's the paper we wrote. Given this context are there any changes you would like to make to the question you asked us?

Assistant:

Thank you for sharing the research paper on "Teaching Students How to Effectively Interact with LLMs at University." I can see how this directly relates to your work on the concept of AI-LOC (AI Locus of Control) and provides valuable context for my question about shifts in student agency.

Based on this additional information, I'd like to refine my question to be more specific about the indicators of AI-LOC shifts:

Could you elaborate on the specific behavioral indicators or evidence you observed that demonstrated students' shift from an external AI-LOC (where they viewed AI as having agency) to an internal AI-LOC (where they recognized their own agency in directing AI)? What particular changes in language, interaction patterns, or reflection quality most clearly indicated this transformation, and at what point in the semester did you notice this shift beginning to occur?

User:**metadata: BB**

Assistant:

Thank you for sharing this detailed conversation. Based on all our discussions, I now have a comprehensive understanding of your pedagogical approach and the evidence of shifts in students' AI-LOC. I'll develop a hierarchical outline for your 7000-word book chapter.

I've created a detailed hierarchical outline for your 7000-word book chapter based on our extensive discussions. The outline:

1. Integrates both theoretical frameworks (Transformative Learning Theory and the Rumsfeld Matrix) that you discussed
2. Captures your core pedagogical approach of decoupling successful AI use from assessment success
3. Emphasizes the development of internal AI-LOC through risk pedagogy and reflection
4. Incorporates your observations of student transformation over the 13-week course
5. Details the specific behavioral and language changes that indicated shifts in student agency
6. Follows an academic structure with claims, evidence, and warrants at the sub-paragraph level

The outline is structured to highlight your rejection of the Deweyan model in favor of a reflective, risk-embracing approach that prioritizes epistemic virtues over technical mastery.

Some key components I've emphasized based on your conversations:

- The importance of time (8+ weeks) for cultural development
- The "Show me your prompts" ritual as central to community building
- The metacognitive emphasis in assessment design
- The specific indicators of shifting from external to internal AI-LOC
- The philosophical implications of treating AI education as liberal arts rather than technical training

Would you like me to elaborate on any particular section, or would you like to suggest any modifications to the structure or emphasis of the outline?

User:

metadata: BB

Great. We're now going to get into the mode for writing. Using the register of our AI-LOC paper, I would like you to take the same approach as above -- where we work on a specific section or subsection, we put in the outline, then you ask us specific and detailed questions, one at a time, until such time as you have enough to plan your writing, confirm your plan with us, and then write the draft.

To begin, however, we're going to need to work on our bibliography. Can you get us a list of topics or claims to prepare academic references for, please? And can you get us a list of claims that you would like us to get quotes or references from our assessments, transcripts, and notes of classroom activity from, please? I think I'll be asking you to do this prep-request in detail, for each of the sections before we start writing.

Can you functionally decompose the above, and give me a readback?

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Assistant:

I understand your request. You want to work collaboratively on writing your book chapter, following a structured approach:

Functional Decomposition:

1. **Bibliography Development Phase:**

- For each section/subsection, I'll identify specific topics and claims needing academic references
- I'll list specific claims where student quotes or classroom evidence would be valuable
- This preparation step happens before writing each section

2. Writing Process for Each Section:

- We'll reference the relevant part of the outline
- I'll ask targeted, specific questions one at a time until I have sufficient information
- I'll propose a writing plan for your confirmation
- Once approved, I'll draft the section using the register similar to your AI-LOC paper

3. Evidence Integration:

- The writing will incorporate academic references you provide
- The writing will integrate student quotes, assessment examples, and classroom observations you share

For our first step, you'd like me to provide a comprehensive list of topics/claims requiring academic references and a list of claims where student evidence would strengthen the chapter.

Is this understanding correct? If so, I'll proceed with preparing the bibliography and evidence requests for the entire chapter.

User:

metadata: BB

For section 1, please give us the evidence required.

Assistant:

For Section I (Introduction - 750 words), here are the specific types of evidence required:

Academic References Needed:

1. Current literature on AI's disruptive impact on education systems (to support claim about AI disrupting not just what we teach but how we teach)
2. Sources on the rapid evolution cycles of AI technologies (6-8 week development cycles)
3. Literature critiquing traditional knowledge transmission approaches for teaching emerging technologies
4. Research on students' initial perceptions of AI agency (external AI-LOC concept)
5. Studies on pedagogical approaches that develop student agency with technology
6. Literature on risk-taking in educational contexts
7. Research on the psychological aspects of technology adoption and agency development

Student Evidence/Classroom Observations Needed:

1. Examples of students initially deferring to AI rather than directing it (early class behaviors)
2. Initial survey or first-class data showing students' starting attitudes toward AI
3. Student quotes revealing their initial conception of AI's authority or agency
4. Early classroom observations demonstrating external AI-LOC behaviors
5. Examples of how students framed their relationship with AI in early reflections or discussions
6. Any pre-assessment data showing student expectations about the course or their relationship with AI

Would you like me to prioritize certain evidence types or make this request more specific for Section I?

User:

metadata: BB

Great. Subection 2.1 please.

Assistant:

For Section II.A (Transformative Learning Theory - part of the 1000-word Theoretical Frameworks section), here are the specific types of evidence required:

Academic References Needed:

1. Mezirow's foundational work on Transformative Learning Theory (original sources)
2. Recent applications of Transformative Learning Theory to technology education
3. Literature connecting "disorienting dilemmas" to technology learning experiences
4. Research on critical reflection as a pedagogical approach in technology education
5. Sources on the role of rational discourse in developing critical thinking about technology
6. Studies examining the effectiveness of simulation-based learning for transformative outcomes
7. Literature on metacognition in technology education contexts
8. Research connecting reflective practice to agency development

Student Evidence/Classroom Observations Needed:

1. Specific examples of AI simulations that created "disorienting dilemmas" for students
2. Student quotes describing moments of perspective transformation regarding AI
3. Excerpts from student reflections demonstrating critical thinking about AI interactions
4. Examples from "Show me your prompts" sessions showing how collective discourse advanced understanding
5. Observations of how students' thinking evolved through the reflective assessment structure
6. Evidence of students reconceptualizing their relationship with AI after simulation experiences
7. Examples showing how students processed and learned from technological failures

Would you like me to focus on particular aspects of Transformative Learning Theory and its application to your AI pedagogy?

User:

metadata: BB

Ok. 2.2 please.

Assistant:

For Section II.B (Rumsfeld Matrix as Epistemological Framework - part of the 1000-word Theoretical Frameworks section), here are the specific types of evidence required:

Academic References Needed:

1. Original source of the Rumsfeld Matrix and its epistemological framework
2. Academic literature that has adapted or applied the Rumsfeld Matrix to educational contexts
3. Research on epistemological development in technology education
4. Studies on epistemic humility in relation to emerging technologies
5. Literature on awareness of technological limitations as a component of digital literacy
6. Research on how students develop awareness of what they don't know (metaignorance)
7. Sources on pedagogical approaches that acknowledge and leverage uncertainty
8. Literature connecting knowledge state awareness to agency development

Student Evidence/Classroom Observations Needed:

1. Examples mapping students' journey through different knowledge states
2. Student quotes recognizing AI's limitations (shifts from unknown to known unknowns)
3. Instances where students demonstrated epistemic humility regarding AI capabilities
4. Classroom moments where emergent AI behaviors created genuine surprise/learning
5. Evidence of how instructor modeling helped establish "known knowns" for students
6. Student reflections showing awareness of their own knowledge limitations about AI
7. Examples of how students came to acknowledge biases, hallucinations, or other AI limitations
8. Observations of students purposefully exploring the boundaries of AI capabilities

Would you like me to elaborate on any specific aspect of how the Rumsfeld Matrix connects to your pedagogical approach or AI-LOC development?

User:

metadata: BB

3.1, please

Assistant:

For Section III.A (Course Context - part of the 750-word Methodology and Context section), here are the specific types of evidence required:

Academic References Needed:

1. Literature on integrating AI into disciplinary contexts (specifically Politics and International Relations)
2. Research on the importance of disciplinary context for technology education
3. Sources on institutional constraints and opportunities for innovative pedagogy
4. Studies on how disciplinary frameworks affect technology learning outcomes
5. Literature on designing technology-enhanced learning specific to humanities/social sciences
6. Research on the relationship between contextual factors and technological skill development
7. Background literature on learning design within institutional constraints

Student Evidence/Classroom Observations Needed:

1. Description of the specific institutional setting and program context
2. Details of how the Politics and International Relations disciplinary focus shaped AI applications
3. Documentation of institutional constraints that affected course design (pass/fail requirements, etc.)
4. Information about how the course fit within broader curriculum requirements
5. Student demographics data from the course (year levels, prior AI experience, etc.)
6. Details about self-selection process for the experimental course
7. Initial survey data showing student backgrounds and experience levels with AI
8. Documentation of specific course objectives and how they integrated AI with disciplinary content

Would you like me to focus on any particular aspect of how the institutional or disciplinary context influenced your pedagogical approach?

User:

metadata: BB

Hi Claude.

I'm going to write a for loop to get an AI to pull out student evidence. Can you unpack the phrases of:

Examples of students initially deferring to AI rather than directing it (early class behaviors)

Initial survey or first-class data showing students' starting attitudes toward AI

Student quotes revealing their initial conception of AI's authority or agency

Early classroom observations demonstrating external AI-LOC behaviors

Examples of how students framed their relationship with AI in early reflections or discussions

Any pre-assessment data showing student expectations about the course or their relationship with AI

Specific examples of AI simulations that created "disorienting dilemmas" for students

Student quotes describing moments of perspective transformation regarding AI

Excerpts from student reflections demonstrating critical thinking about AI interactions

Examples from "Show me your prompts" sessions showing how collective discourse advanced understanding

Observations of how students' thinking evolved through the reflective assessment structure

Evidence of students reconceptualizing their relationship with AI after simulation experiences

Examples showing how students processed and learned from technological failures

Examples mapping students' journey through different knowledge states

Student quotes recognizing AI's limitations (shifts from unknown to known unknowns)

Instances where students demonstrated epistemic humility regarding AI capabilities

Classroom moments where emergent AI behaviors created genuine surprise/learning

Evidence of how instructor modeling helped establish "known knowns" for students

Student reflections showing awareness of their own knowledge limitations about AI

Examples of how students came to acknowledge biases, hallucinations, or other AI limitations

Observations of students purposefully exploring the boundaries of AI capabilities

To be longer such that a lower parameter AI can vibe-match with material? Make sure that there are no assumptions baked into the phrases, such that the query can be matched without extra context.

Assistant:

Here's an expanded version of each phrase that provides more context and detail for a lower-parameter AI to better match with your material:

User:

1. Detailed examples from early classroom sessions where students showed deference to AI outputs by accepting them without questioning, displaying hesitance to challenge AI-generated content, or using language that positioned the AI as an authority figure rather than a tool under their control

2. Comprehensive data collected from pre-course surveys, initial class discussions, or

early assignments that reveal students' beginning perceptions, attitudes, misconceptions, and comfort levels regarding artificial intelligence technologies

3. Verbatim quotes or paraphrased statements from students during initial class sessions that demonstrate they viewed AI as having inherent authority, expertise, or decision-making capacity beyond their own abilities to direct or control it

4. Specific observed behaviors from the first 2-3 weeks of classes showing students attributing outcomes primarily to the AI system rather than to their own inputs, prompting strategies, or critical judgment - behaviors indicating an external AI locus of control

5. Clear examples from students' early written reflections, class discussions, or informal conversations showing how they conceptualized, described, and framed their working relationship with AI systems before developing more sophisticated understanding

6. Any collected data from pre-assessments, initial questionnaires, or first-day activities that captured students' expectations about what they would learn in the course, how they anticipated using AI, or their preconceived notions about their relationship with AI technologies

7. Detailed descriptions of specific simulation activities, role-plays, or practical exercises involving AI that created cognitive dissonance for students, challenging their existing mental models and forcing them to reconsider their understanding of AI capabilities and limitations

8. Direct quotations from students describing moments when their perspective on AI fundamentally shifted, including their reflections on what caused this transformation and how it changed their approach to working with AI technologies

9. Selected passages from students' written reflections that demonstrate sophisticated critical thinking about their AI interactions, including analysis of AI limitations, recognition of their own role in directing AI, or thoughtful consideration of ethical implications

10. Specific instances from the "Show me your prompts" classroom sessions where student sharing of their AI strategies led to collective insights, problem-solving, or advanced understanding that wouldn't have emerged through individual work alone

11. Sequential examples tracking how individual students' thinking evolved through the course's reflective assessment structure, showing progression from simplistic to nuanced understanding of AI capabilities and their own agency in AI interactions

12. Evidence from student work or discussions that shows how they reconceptualized their relationship with AI after participating in simulation experiences, including changes in how they described AI, how they approached prompting, or how they evaluated AI outputs

13. Specific examples of how students responded to technological failures or limitations, what they learned from these experiences, and how these "productive failures" contributed to their development of more sophisticated AI interaction strategies

14. Longitudinal examples that map specific students' journeys through different states of knowledge about AI, showing how they progressed from complete unawareness (unknown unknowns) to recognition of specific limitations (known unknowns) to confident knowledge (known knowns)
15. Direct quotations from students that demonstrate their growing recognition of AI's specific limitations, constraints, and boundaries, particularly comments that show the shift from seeing AI as all-knowing to understanding its specific capability boundaries
16. Classroom instances where students demonstrated intellectual humility regarding AI capabilities, acknowledging the limitations of both the technology and their own understanding of it, and approaching AI interaction with appropriate skepticism
17. Detailed descriptions of classroom moments where unexpected or emergent AI behaviors created genuine surprise or confusion, leading to valuable learning opportunities about the unpredictable nature of these technologies
18. Specific examples showing how instructor modeling of AI interaction techniques, critical evaluation strategies, or prompt engineering approaches helped establish fundamental knowledge that students could build upon in their own experimentation
19. Passages from student reflection assignments where they explicitly acknowledge gaps in their own understanding of AI, limitations in their ability to predict AI responses, or uncertainties about how to approach particular AI interaction challenges
20. Concrete examples of how students came to recognize and articulate specific AI limitations such as hallucinations, biases, outdated information, or other shortcomings, including how this recognition changed their interaction strategies
21. Documented observations of students deliberately and systematically testing the boundaries of AI capabilities through experimental prompting, edge case testing, or comparative analysis of different AI systems to better understand their limitations and strengths

These expanded descriptions avoid making assumptions about the specific nature of the evidence while providing enough context for pattern-matching. Each description focuses on observable behaviors, statements, or artifacts that could be found in your classroom notes, transcripts, or student submissions.

User:**metadata: BB****Great. Can you give me a context-wrapper prompt to get me started, please?**

Assistant:

Here's a context-wrapper prompt to help you extract relevant student evidence from your materials:

User:

I need to extract specific examples of student learning and AI interaction from my teaching materials to support claims in my book chapter "Teaching the Unknown: Risk and Agency in the Time of AI in the Classroom."

I have classroom observations, student reflections, assessment submissions, and discussion transcripts from my 13-week Politics and International Relations course that integrated AI.

Please help me identify strong evidence for the following aspects of student development with AI:

[INSERT SPECIFIC EVIDENCE REQUEST FROM THE EXPANDED LIST]

When reviewing the materials, please look for:

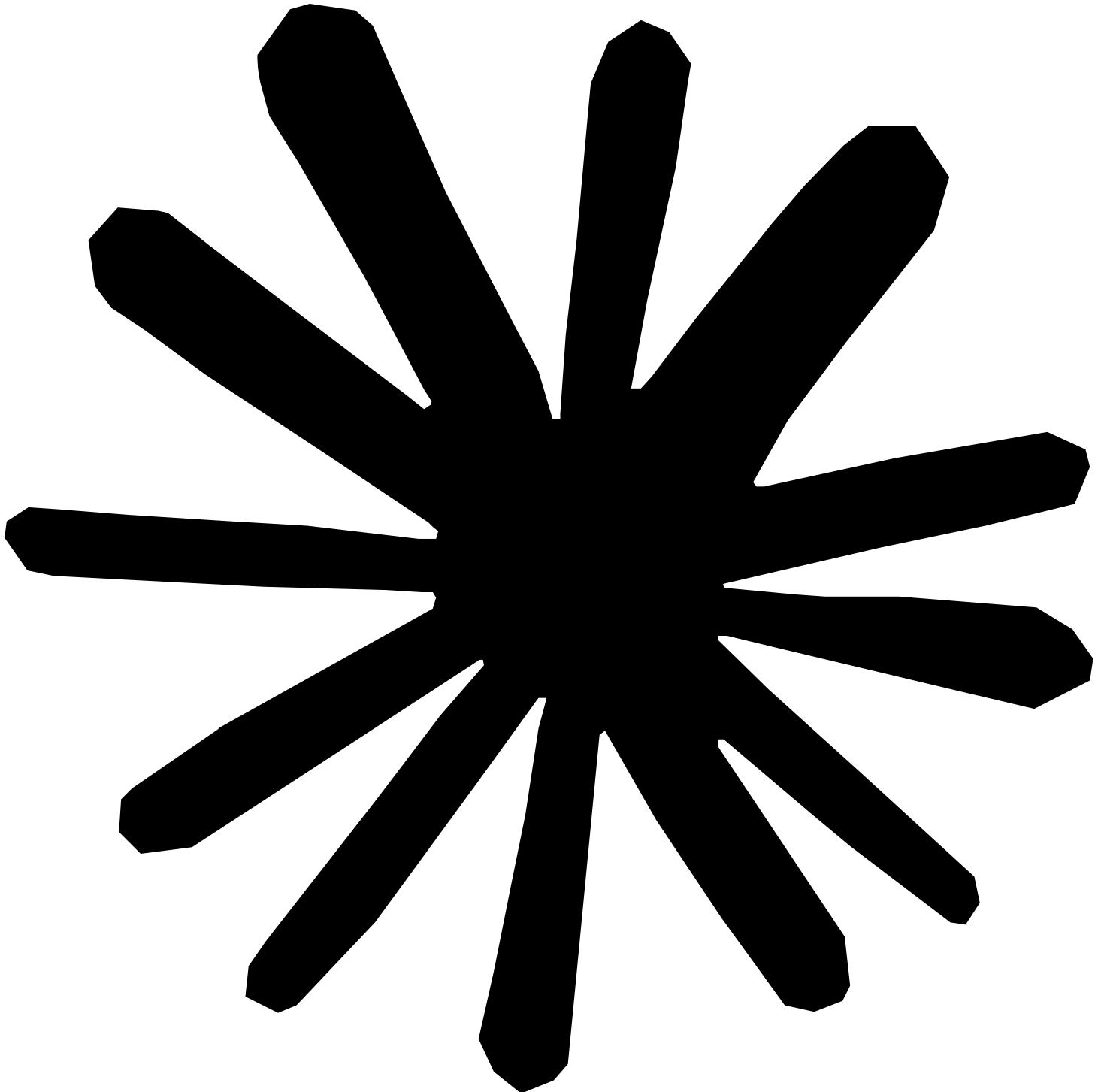
1. Direct student quotes that clearly demonstrate the requested phenomenon
2. Specific classroom incidents that illustrate the concept
3. Changes in student language or behavior over time that show development
4. Reflective statements where students articulate their own learning process
5. Examples that show contrast between early and late-semester understanding

The examples should be concrete enough to use as evidence in an academic publication. For each piece of evidence you identify, please note:

- Approximate timing (early/mid/late semester)
- Context in which it occurred (classroom discussion, written reflection, simulation activity, etc.)
- Why it serves as strong evidence for the claim in question

I'm particularly interested in evidence that shows the development of internal AI-LOC (Locus of Control) where students shifted from viewing AI as having authority to recognizing their own agency in directing AI.

You can modify this wrapper by inserting specific items from the expanded list I provided, focusing on whichever aspect of student evidence you need for each section of your chapter. The prompt is designed to help lower-parameter AI identify relevant evidence while remaining open to different types of examples that might appear in your materials.



Claude can make mistakes.
Please double-check responses.

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Chat controls

User: Claude**Sonnet 4**Smart, efficient model for everyday use [Learn more](#)

Artifacts

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Project content

[Teaching the Unknown paper.](#)

Created by Brian Ballsun-Stanton

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Content

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