SECTION 01

Teachers at the AI Table

Dr Lucy Macnaught Auckland University of Technology, Auckland, New Zealand
Invited Colloquium: Empowering EAL/D students through generative AI
ACTA 2026

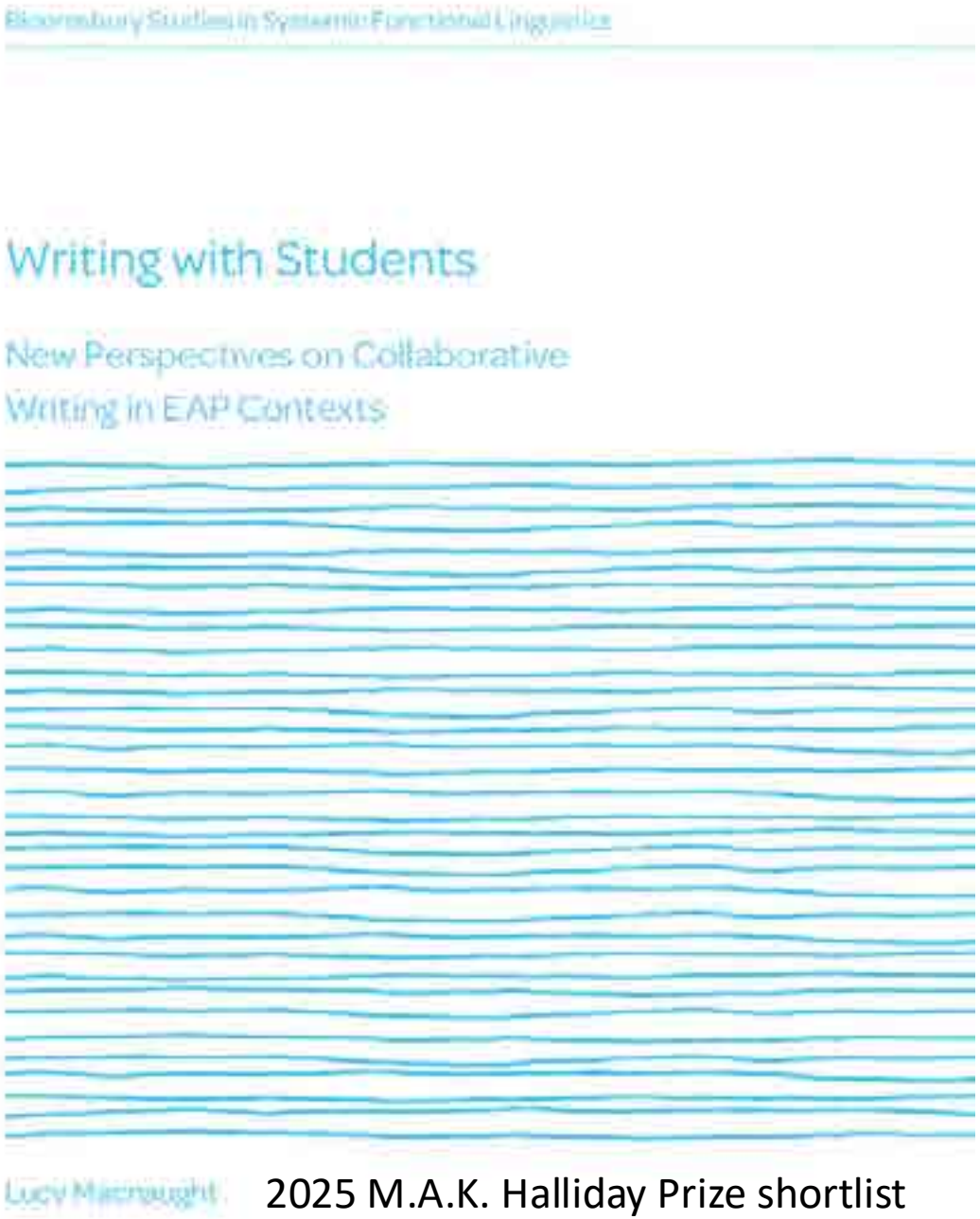
TE MĀTĀPUNA
ki Waihorotiu | ki Akoranga | ki Manukau
LIBRARY & LEARNING SERVICES

AUT
TE WĀNANGA ARONUI O TĀMAKI MAKAU RAU

Nāu te rourou, nāku te rourou, ka ora ai te iwi:
"With your food basket and my food basket, the people will thrive."

Māori Whakatauki (proverb)

The GPT train



2025 M.A.K. Halliday Prize shortlist

When we ask students to answer a question, what knowledge are we expecting them to draw on?

David Rose

What knowledge are we expecting students to bring to bear
when they are working with AI?

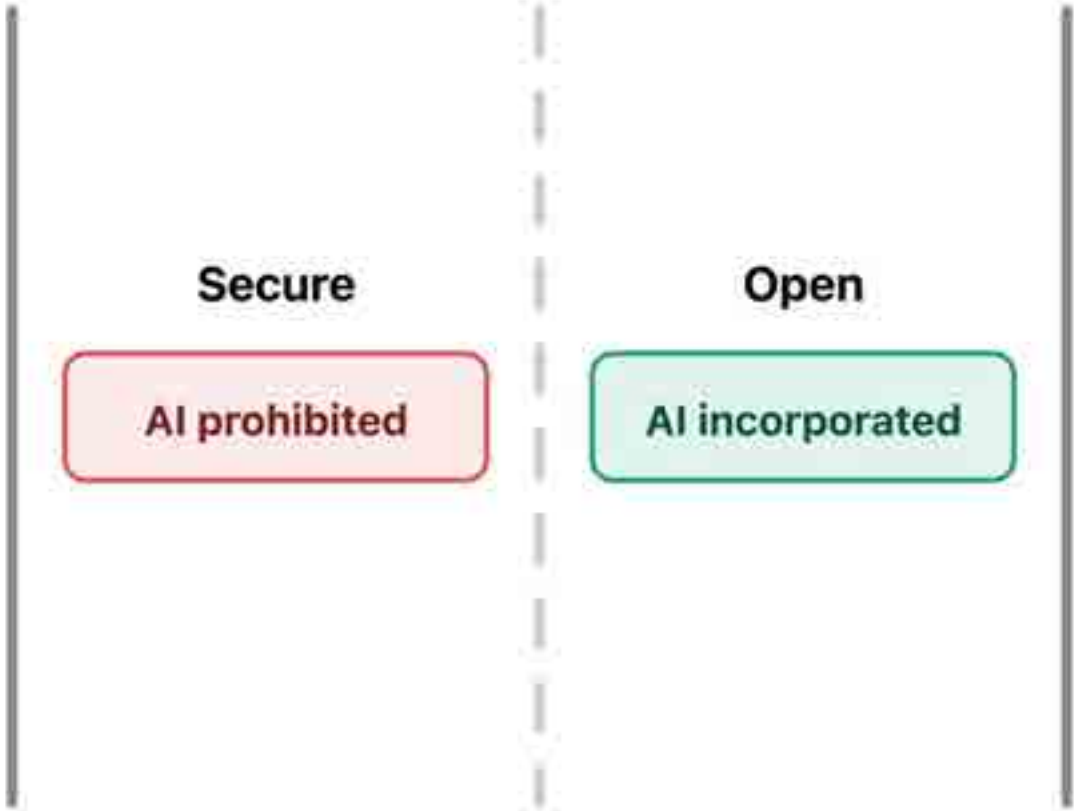
Graduate Entry Nursing (GEN)

Master's of Nursing Science

- All: new to research writing
- + International students: Bachelor degree elsewhere
- + Māori & Pasifka students

Widely adopted **two-lane** approach to assessment in Higher Ed

University of Sydney – as of 2024



Assessment and learning experiences equip students to participate **ethically and actively** in a society where generative AI is ubiquitous

June 2026
Tertiary Education Quality and Standards Agency TEQSA
Assuring quality learning in a gen AI-integrated future: The role of adaptive capabilities

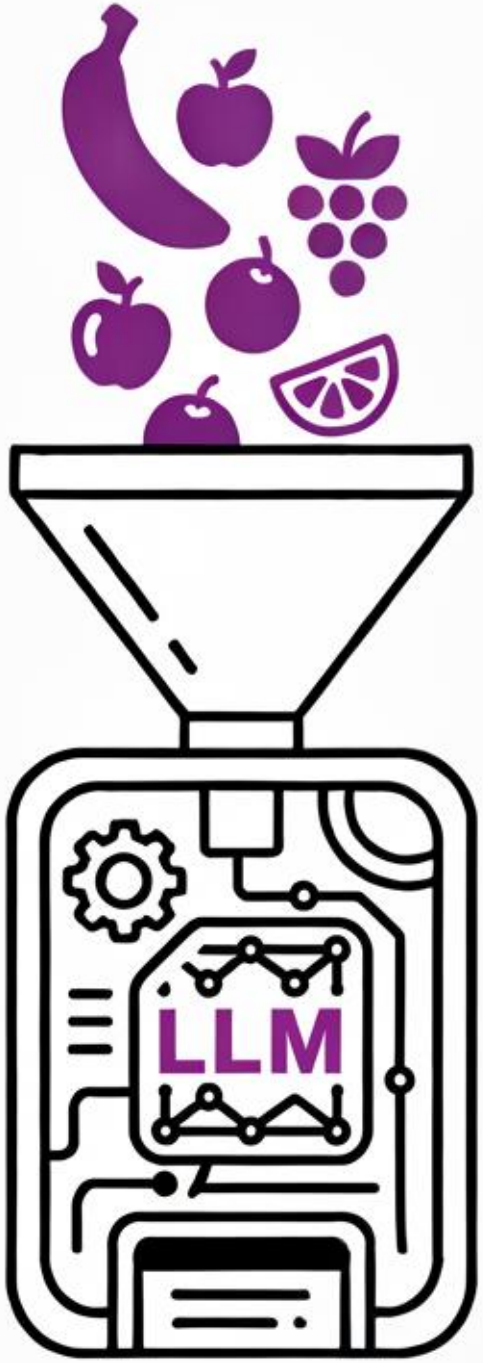
Image created with Gemini 3.1

Knowledge about language

(what language ‘things’ are & dynamic processes of writing with them)

Berry (2005)
Christie et al. (1990)
Hammond & Gibbons (2005)
Macnaught (2024)
Rose & Martin 2012)
Schelppegrell (2013)

Micro-level challenge:
teaching our students to use metalanguage
(language about language)
“as prompt food”



Customized chatbots or crafted prompts

can focus on academic literacy within
one or more cells of **the 4x4**

Macnaught 2026
drawing on:
Humphrey 2017
Humphrey et al. 2010

Levels of Text / Meanings	**Whole text** (genre, register, discourse semantics)	**Paragraph** (discourse semantics)	**Sentence** (lexicogrammar)	**Word** (lexicogrammar)
Language to express ideas (field – experiential meanings)				
Language to develop ideas (field – logical meanings)				
Language to interact with audiences (tenor – interpersonal meanings)				
Language to organize cohesive texts (mode – textual meanings)				

Building a shared metalanguage

Example – introduction section – article about Diabetes Mellitus (DM)

Critique
past research

Justify
the need for your research

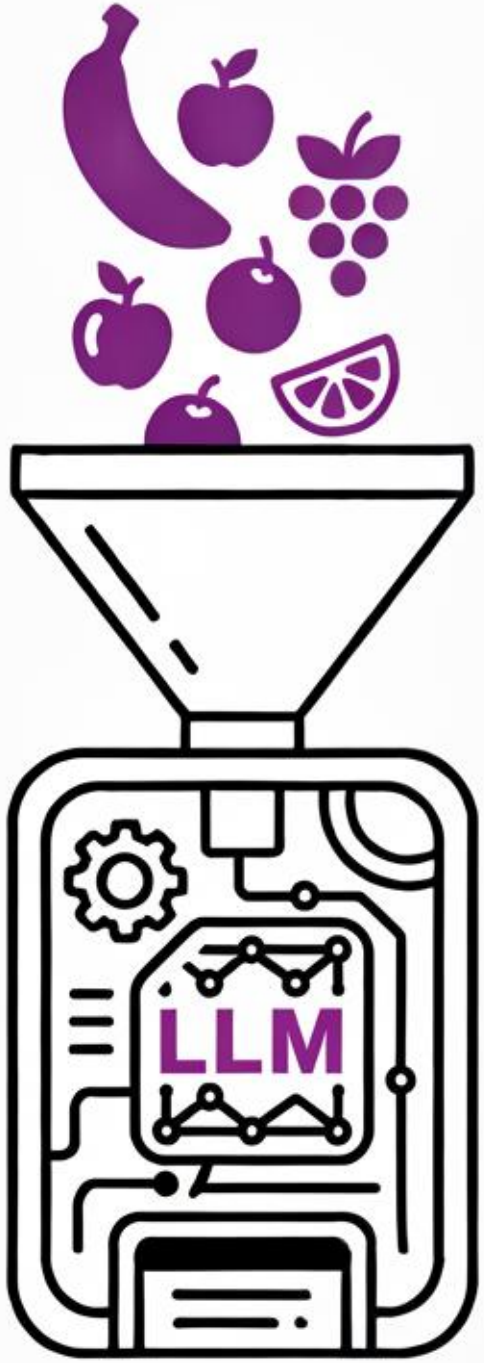
To our knowledge, despite the available population studies, **no comprehensive analysis is yet available** in Europe on both types of DM, and reliable data on adolescents are still sparse (Sawyer et al., 2012). Indeed, considering their effects on health and quality of life, and the substantial direct and indirect economic burden (Fazeli et al., 2013**), investigation of** the burden of T1DM and T2DM in adolescents in European countries **is overdue**… **Given the inconsistency and sparsity** in data collection systems and the major data gaps for adolescents (International Diabetes Federation, 2021), **we** used estimates provided by the Global Burden of Diseases, Injuries, and Risk Factors study 2019 (GBD, 2019) to…

…new analysis of data for 24 Western European countries.

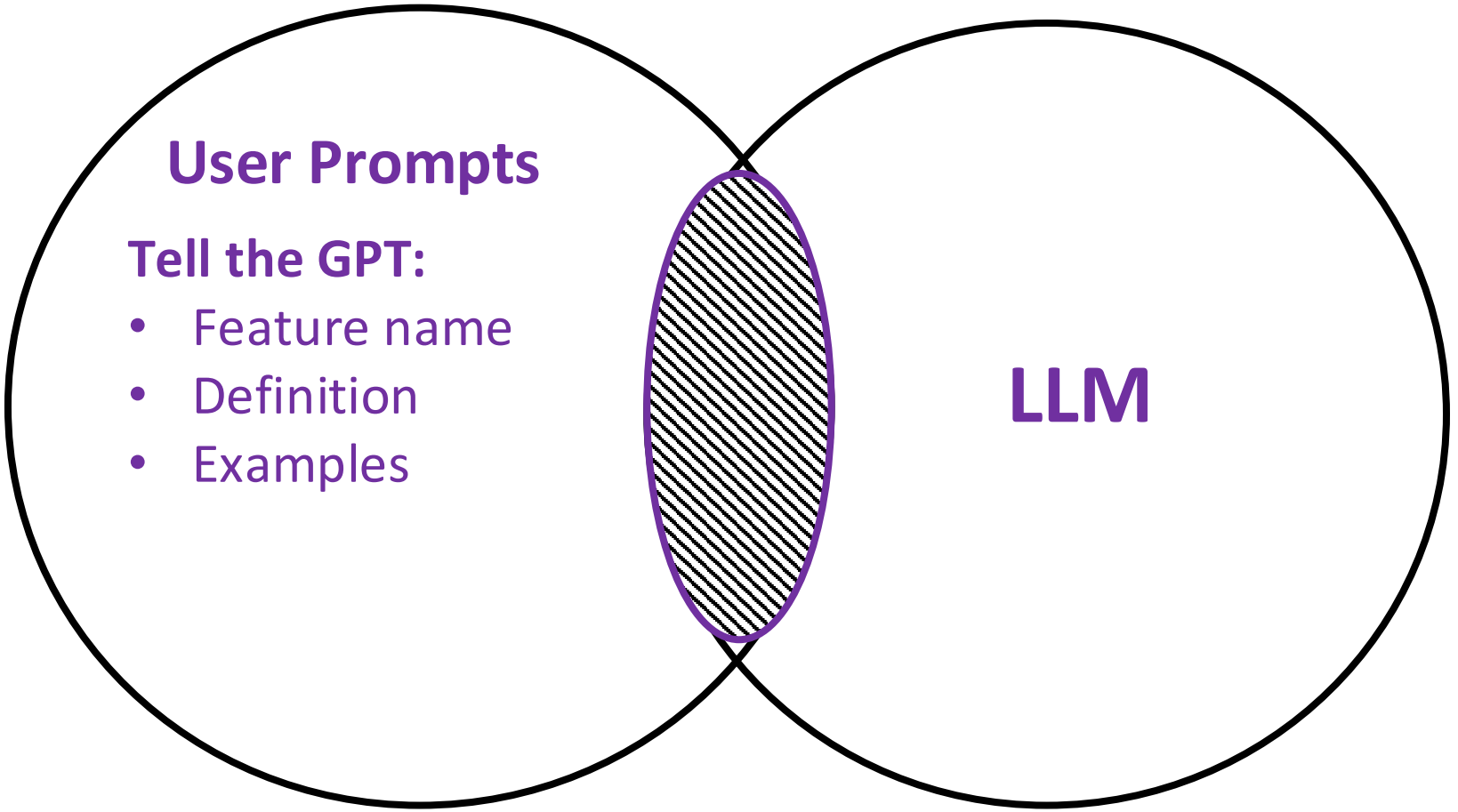
How do I get the AI to identify this?

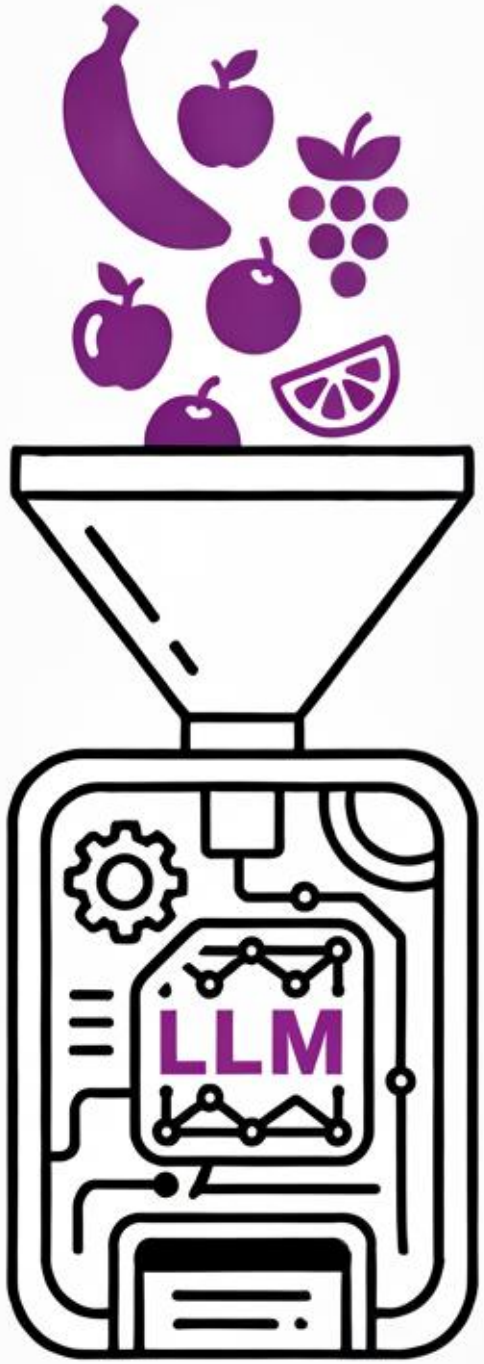
Critique	Language examples
Writer shifts from strengths to limitations	While past research has generated insights about X, further research needs to investigate...

Justification	Language examples
Writer makes claims about why the new research is needed	Through further study of X, the proposed study aims to increase our understanding of...



Creating an overlap of metalanguage





Conceptual paper: customising chatbots for writing feedback…

Journal of English for Academic Purposes 80 (2026) 101646

Contents lists available at ScienceDirect

Journal of English for Academic Purposes

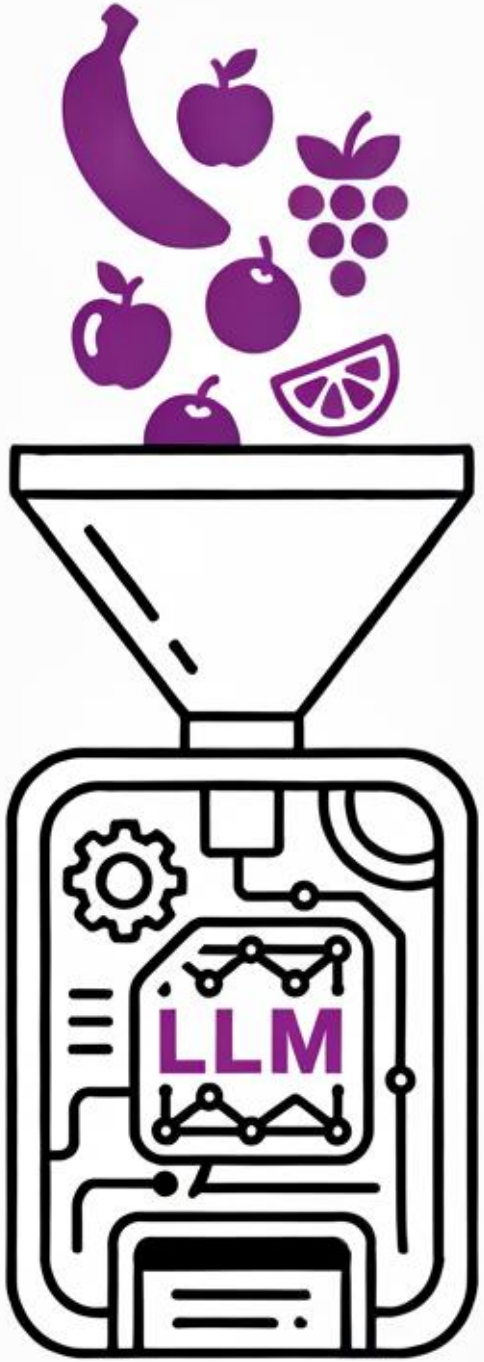
journal homepage: www.elsevier.com/locate/jeap

Check for updates

Customising chatbots for writing development: Anticipating semiotic mediation with the theoretical architecture of systemic functional linguistics

Lucy Macnaught *

Auckland University of Technology, New Zealand



Example prompt

ROLE

You are an expert at writing the literature review section of research proposals. Your job is to give **feedback on specific features** in the introduction of my research article.

- Identify where I **critique** past research and then use this **critique** as the basis for **justifying** the need for my new research.
- Also identify if my **critique** and **justification** don't match.
- Also highlight where **critique** is missing or could be added.
- **Output**: create a succinct table with three columns: critique, justification, options.

DEFINITION OF FEATURES:

By critique, I mean respectfully acknowledging specific strengths and weakness of past research. This critique needs to be relevant to positioning why my new research project is needed.

By justify, I mean making a claim about the need and possible benefit of doing the new research. This justification needs to directly correspond to the limitations of past research studies, which I identify in the critique.

EXAMPLE: *While past research has generated insights about short-term strategies for relieving stress and burnout of community based mental health nurses, research needs to further examine long-term strategies.*

Prompt
+ Introduction section
in Claude Opus 4.6

TEACHING IN HIGHER EDUCATION
2024, VOL. 29, NO. 4, 1004–1022
https://doi.org/10.1080/13562517.2022.2048369

Routledge
Taylor & Francis Group

RESEARCH ARTICLE

Check for updates

Sustainable embedded academic literacy development: the gradual handover of literacy teaching

Lucy Macnaught, Mark Bassett, Vanessa van der Ham, John Milne and Chris Jenkin

School of Education, Auckland University of Technology, Auckland, New Zealand

ABSTRACT

This study reports on a four-year project to embed academic literacy within one core course of a Bachelor of Education program. It involves an interdisciplinary collaboration between learning advisors, as literacy specialists, and lecturers, as subject specialists. It examines their roles and responsibilities and lecturers' perspectives when handing over the teaching of academic literacy to them. Data encompasses interviews with lecturers, meeting notes, and cohort statistics about assessment grades. Discourse analysis with theory from Systemic Functional Linguistics identifies the shifting contributions of the collaborators and how lecturers evaluate their experiences. Findings suggest that handover is smooth when it is done gradually and involves intensive prior collaboration. However, the contrasting views of the lecturers raise questions about what is optimal for students. Although limited, data indicates that reductions in resubmission rates and students achieving in the minimal passing range co-occur with the addition of mini videos about reading and writing critically.

ARTICLE HISTORY
Received 9 October 2021
Accepted 10 February 2022

KEYWORDS
Academic literacy development; embedded literacy; interdisciplinary collaboration; systemic functional linguistics; appraisal theory

Introduction

Claude Opus 4.6

Thought for less than a second

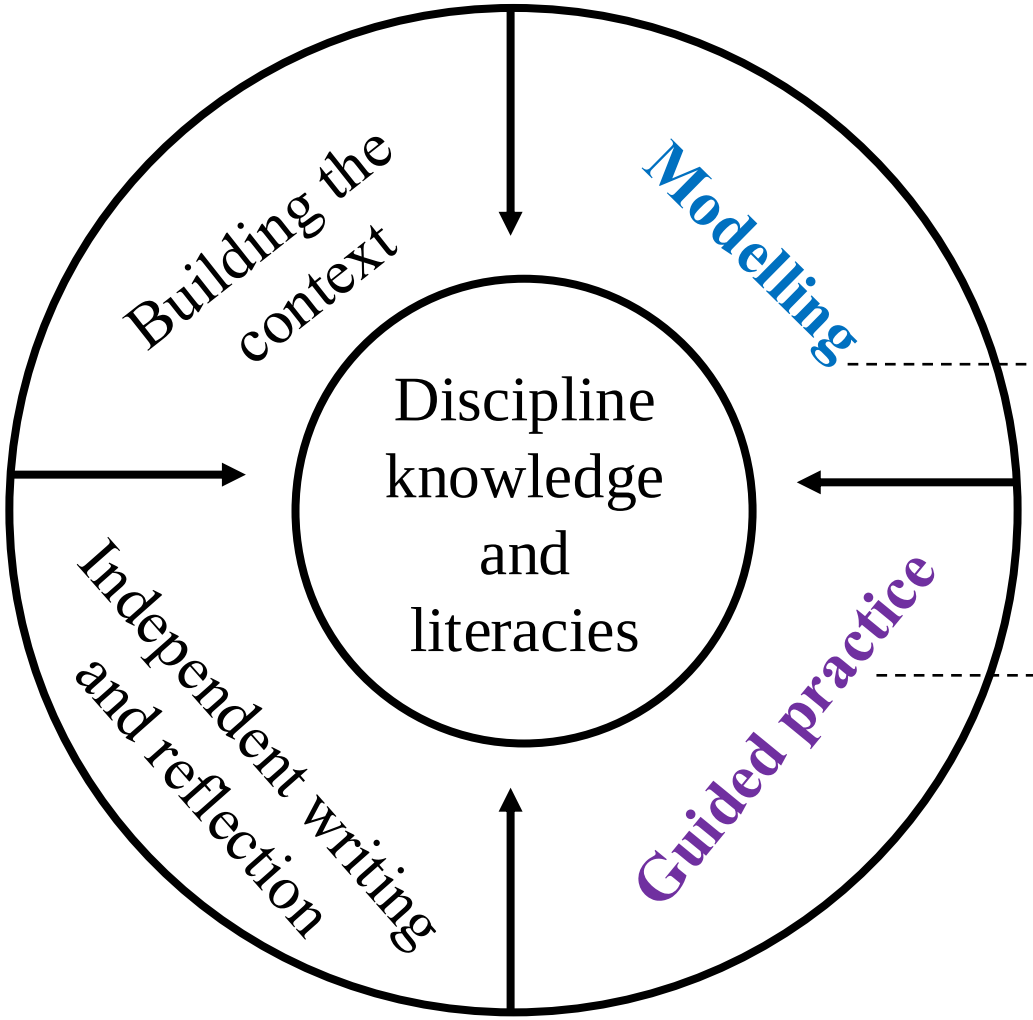
Here is my analysis:

CRITIQUE	JUSTIFICATION	OPTIONS
Many universities still operate from a remedial/support model, leading to low student engagement due to perceived lack of value, relevance, or remedial stigma (¶2).	Embedded approaches address these barriers and benefit all students (end of ¶2).	✅ Well matched, though this critique justifies embedding *in general* rather than the specific focus of your study (handover/sustainability). Consider tightening the link to your study's aim.
Lecturers show mixed responses to embedding — some feel under-skilled, overburdened, or see it as someone else's job; enthusiasm is "rarely reported" (¶4).	"Even less clear is what contributes to lecturers being willing and confident with embedding academic literacy in their courses."	⚠️ Partial match. The critique is strong, but the justification is stated as a gap rather than explicitly tied to your study's aim (examining handover and lecturer experience). Connect this more directly to your research questions.

Student AI Declaration:

I used Claude Opus 4.6 for revising my draft.
Specifically, I used it to check where I am critiquing past research and providing justification for my new project.

Meso-level challenge: principled integration of AI in T&L sequences…



Knowledge building
F2F

Applying knowledge in AI interactions
F2F & after class

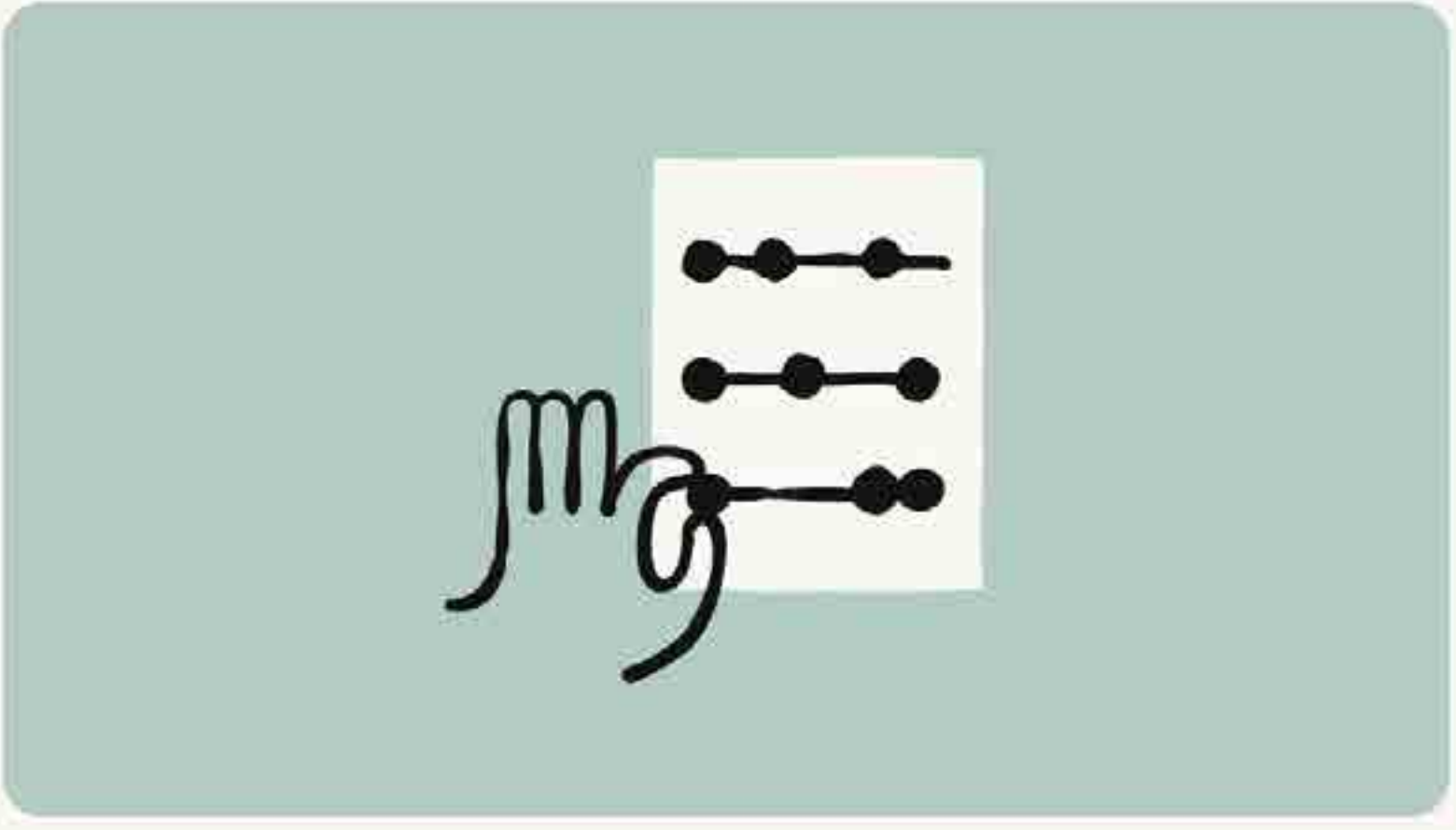
A Teaching and Learning Cycle
This TLC version - Humphrey (2017)
drawing on Humphrey and Feez (2016) and Callaghan and Rothery (1988)

Agentic coding and persistent returns to expertise

Jun 16, 2026

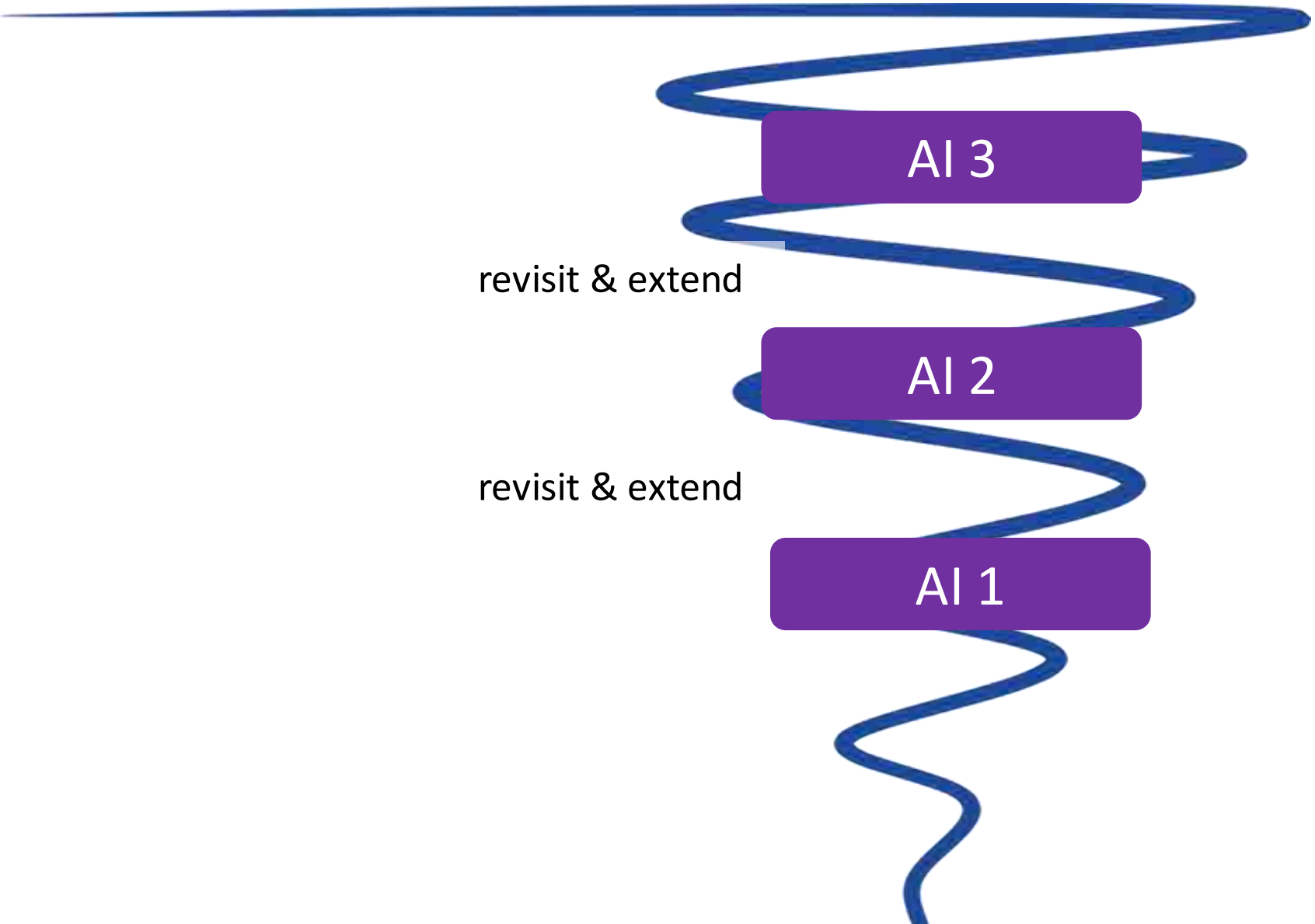
Read in PDF

400,000 Claude Code sessions



…the ability to steer Claude toward success comes **more from command of a domain** than from the ability to write code (p. 14)

Macro-level challenge: connecting AI tools/experiences



Feez 2006 – genre spirals
Bruner 1960 – curriculum spirals

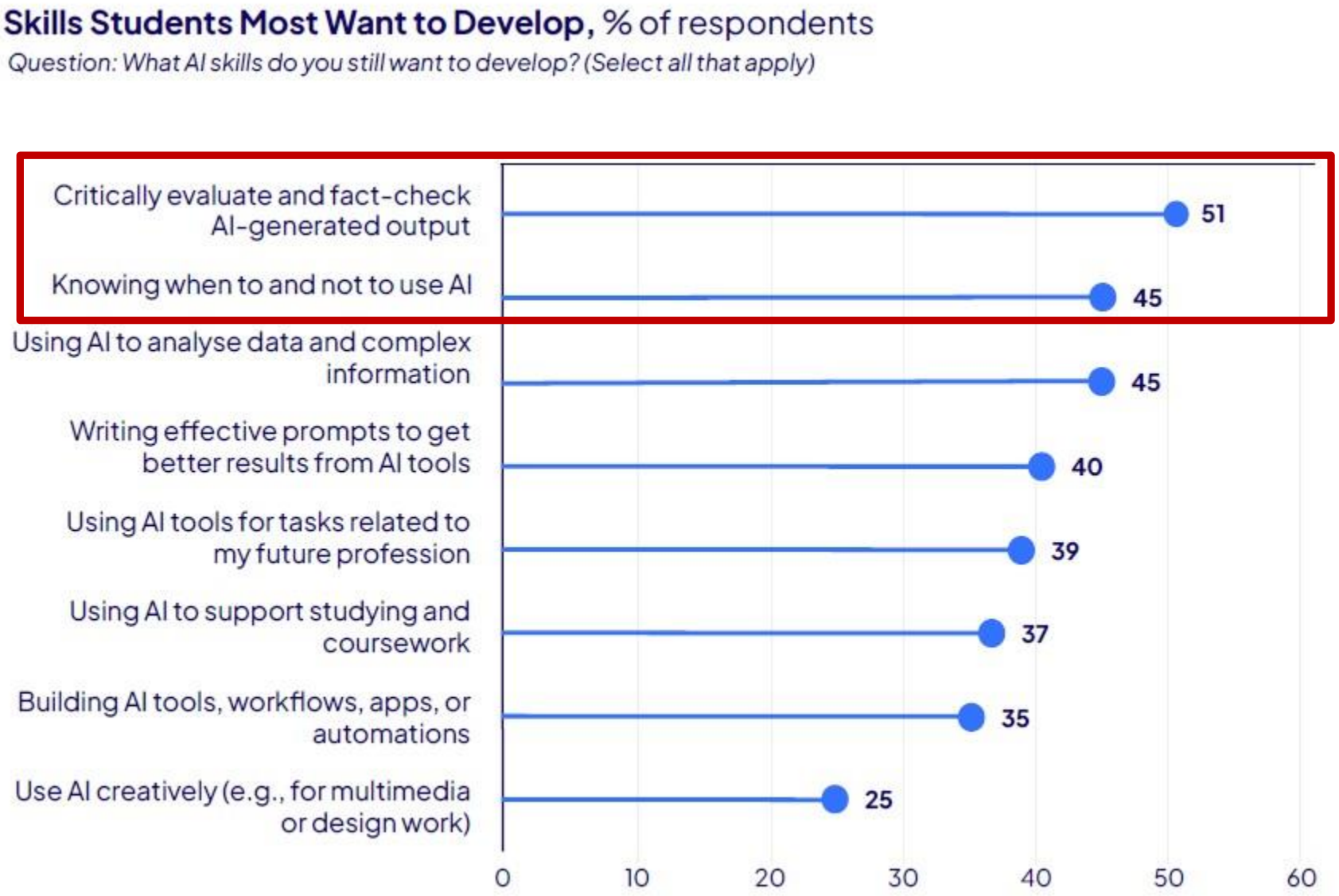
Student experience?

CCO

Digital Education Council – June 2026

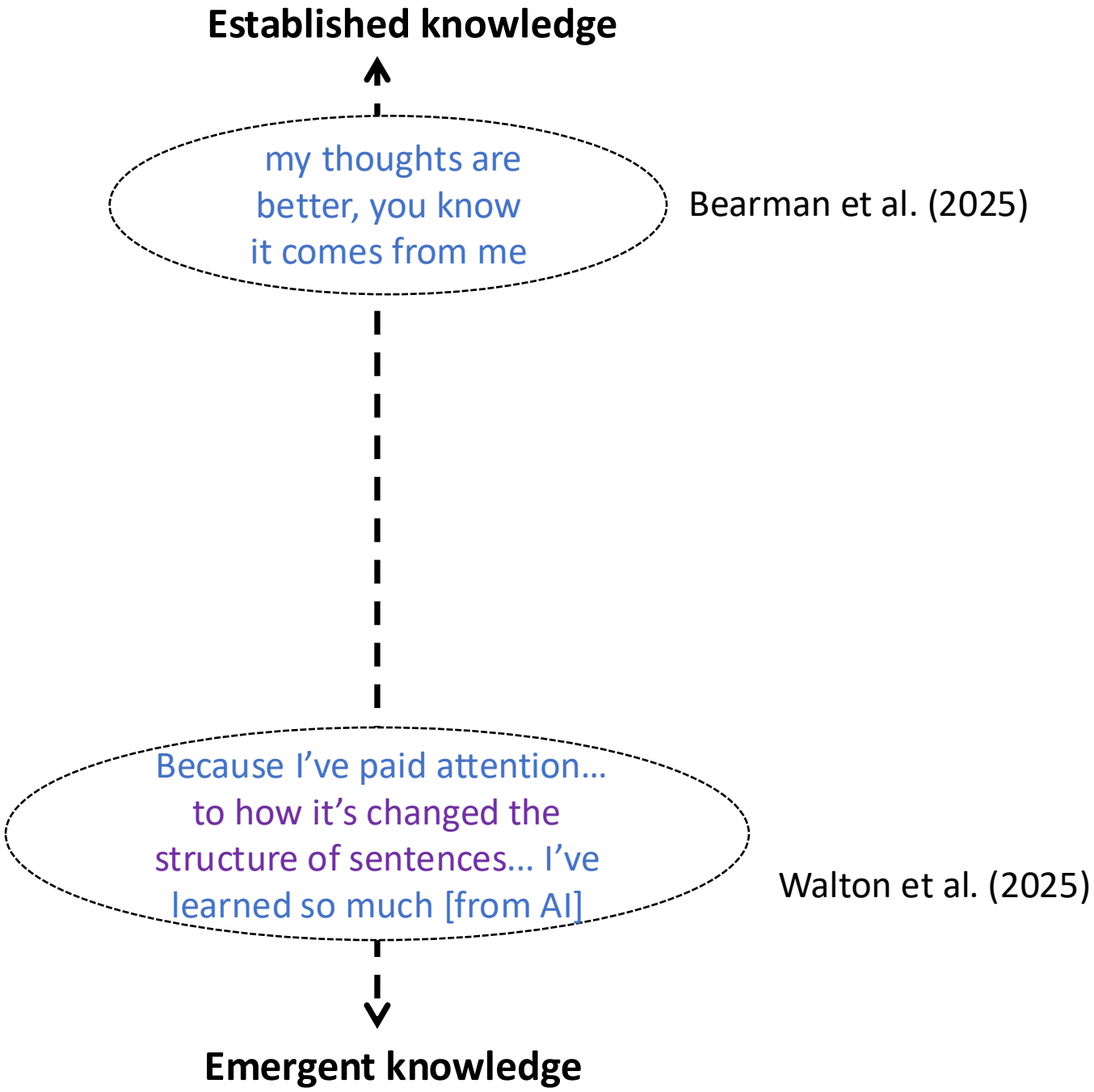
AI in Higher Education Global Survey

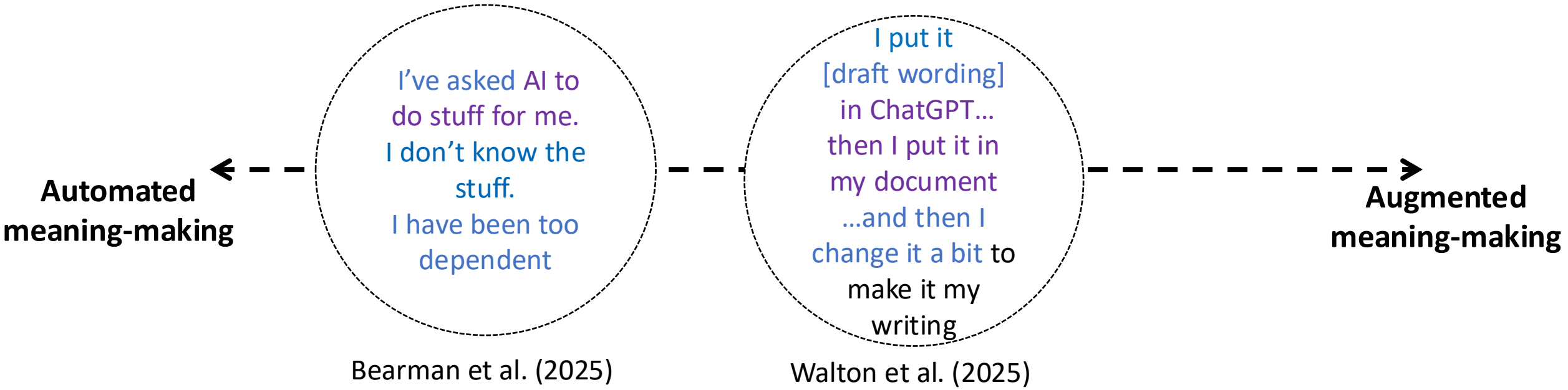
35 countries
27,284 students



Qualitative data

Students using AI in Australian Higher Ed





Automated – Augmented framing for AI

Parasuraman, Sheridan and Wickens (2000). *A model for types and levels of human interaction with automation*

Peradana, Bharathi and Lee (2026). From automation to augmentation

Lei & Kim 2024: Automation and Augmentation: Artificial intelligence, robots, and work.

The following slides contain new unpublished material.
Please check Lucy Macnaught's Google Scholar account for publication updates.

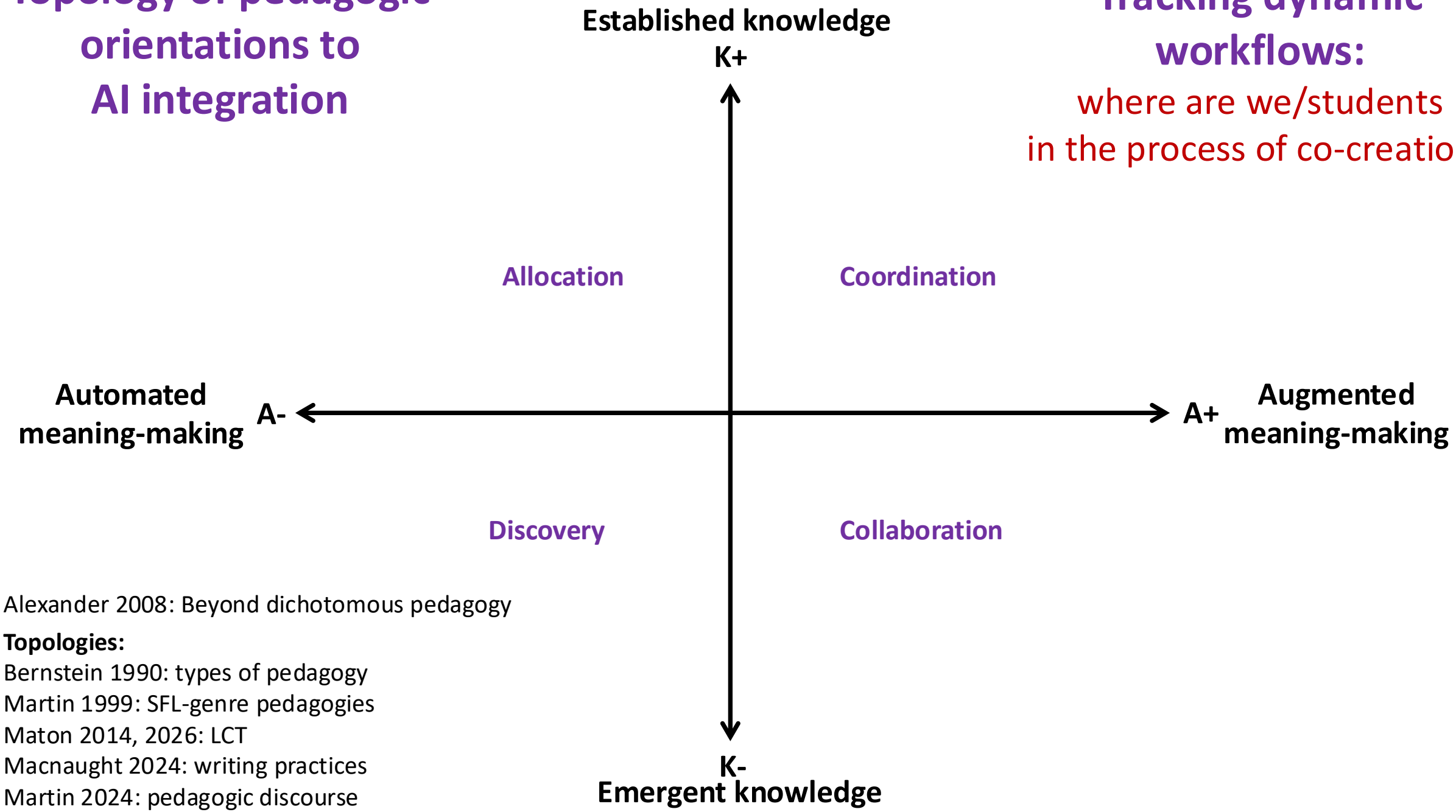
Cite as:

Macnaught, L. (2026, September 30). *Driving AI in our linguistics lane: Using SFL principles to interact with and design AI* [Plenary]. Australian Systemic Functional Linguistic Association Conference, Australian Catholic University, North Sydney.

NOTES for the topology:

Allocation: you have the knowledge to do a task, but you choose to get the AI to do it.
Coordination: you have the knowledge to do a task and you apply this knowledge by directing AI to assist you.
Collaboration: you may bring some knowledge to a task, but you are also open to ideas and suggestions from AI. However, you still control the decision making and process.
Discovery: you may bring some (or on the extremity very little) knowledge to a task, and you want to see what AI has to offer and could and do for you.

Topology of pedagogic orientations to AI integration



Tracking dynamic workflows:

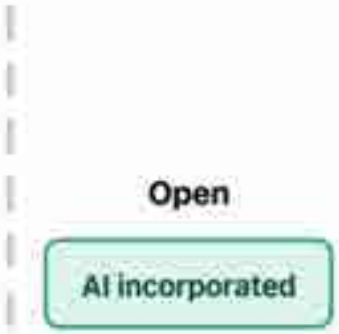
where are we/students in the process of co-creation?

Alexander 2008: Beyond dichotomous pedagogy

Topologies:

Bernstein 1990: types of pedagogy
Martin 1999: SFL-genre pedagogies
Maton 2014, 2026: LCT
Macnaught 2024: writing practices
Martin 2024: pedagogic discourse

Example 2 – complexities of long-term conditions

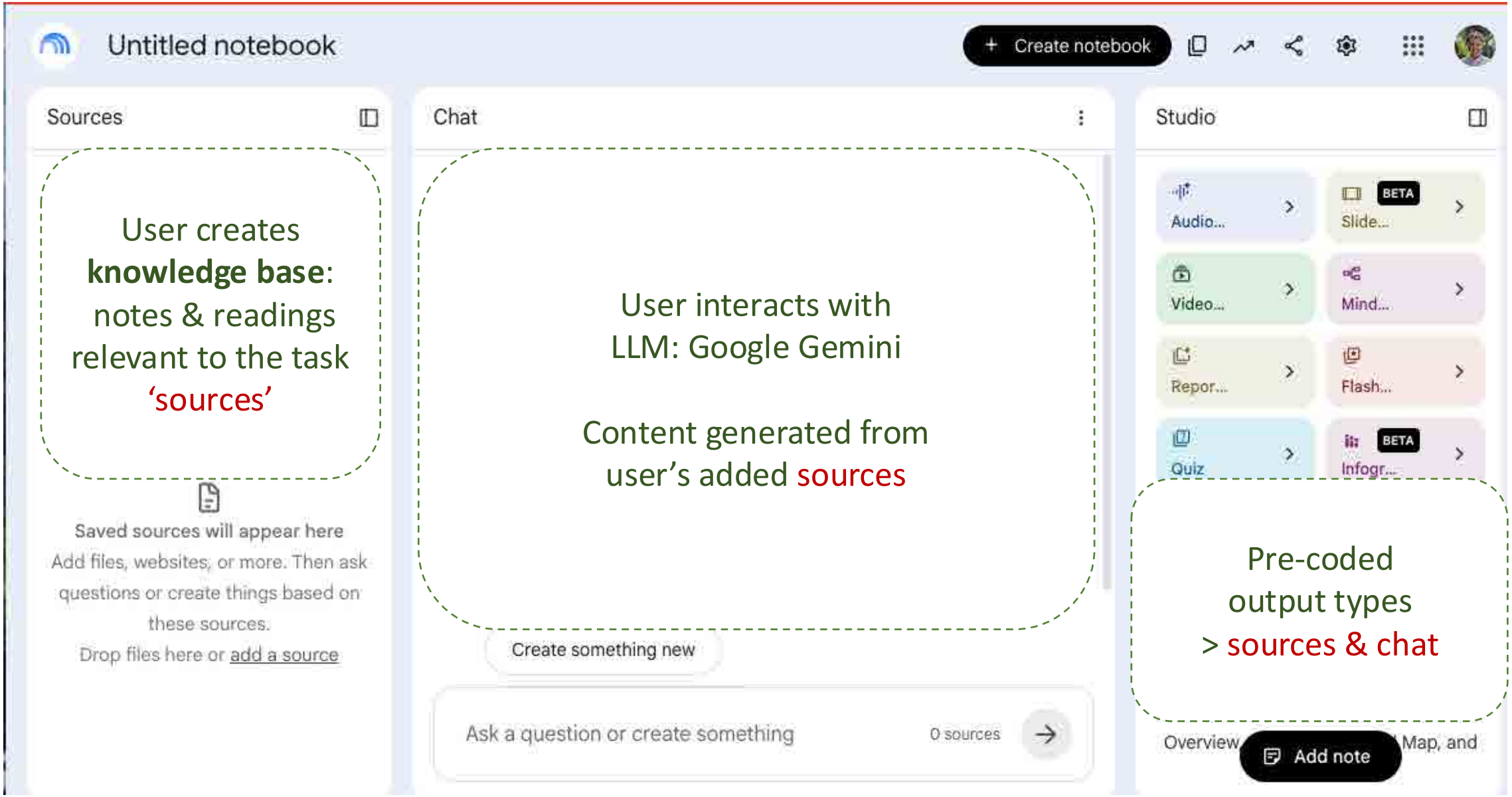


Group Presentation

For this assessment, you will be assigned to a group (3 or 4 students) to create a concept map that demonstrates critical analysis of one allocated long-term health condition.

Other visualisations are acceptable too

Possible tool choice - Gemini Notebook



Chat

Customize

Clinical Indicators of Lower Extremity Deep Vein Thrombosis

3 sources · Jul 16, 2026

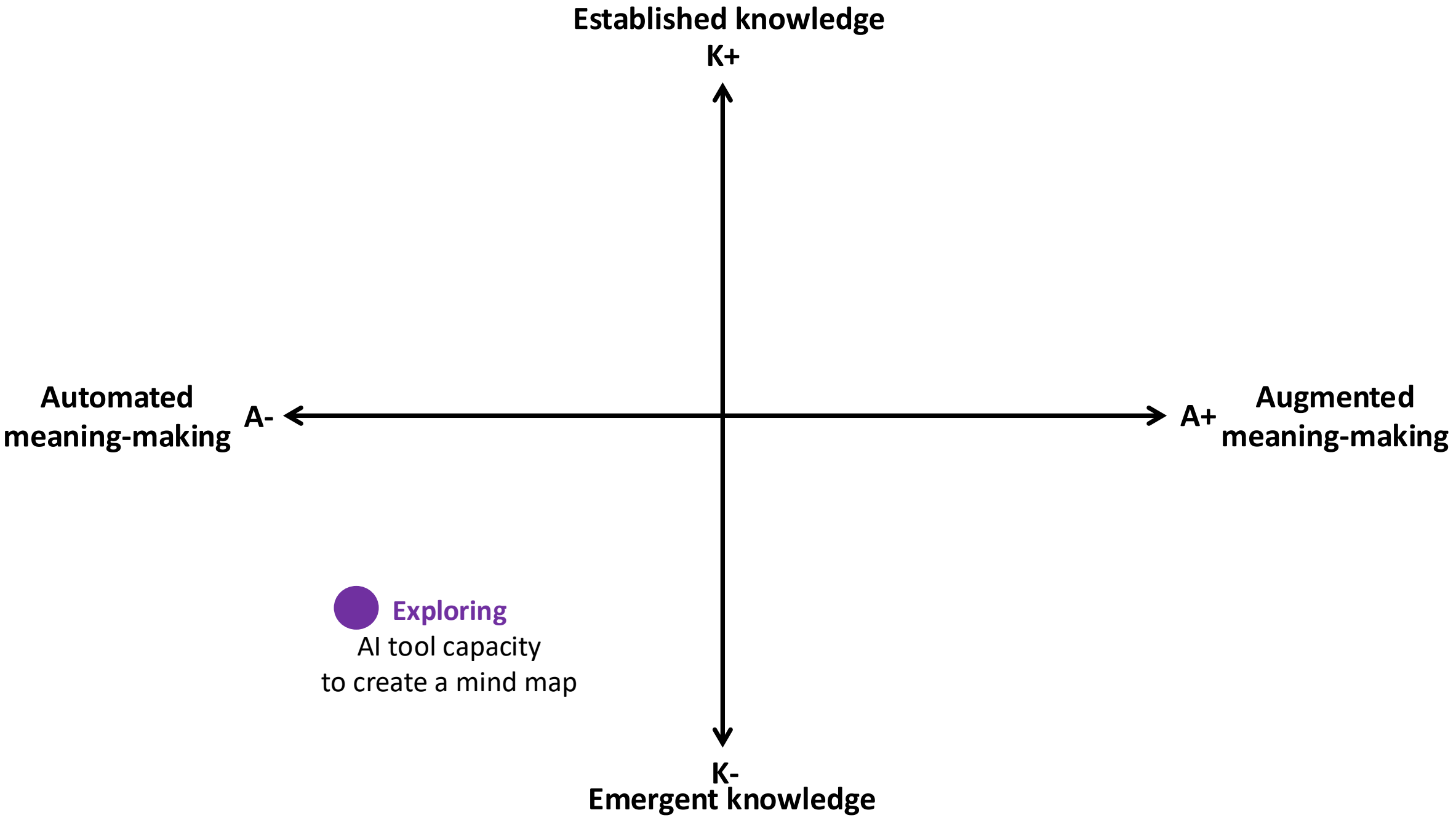
little knowledge

Prompt A

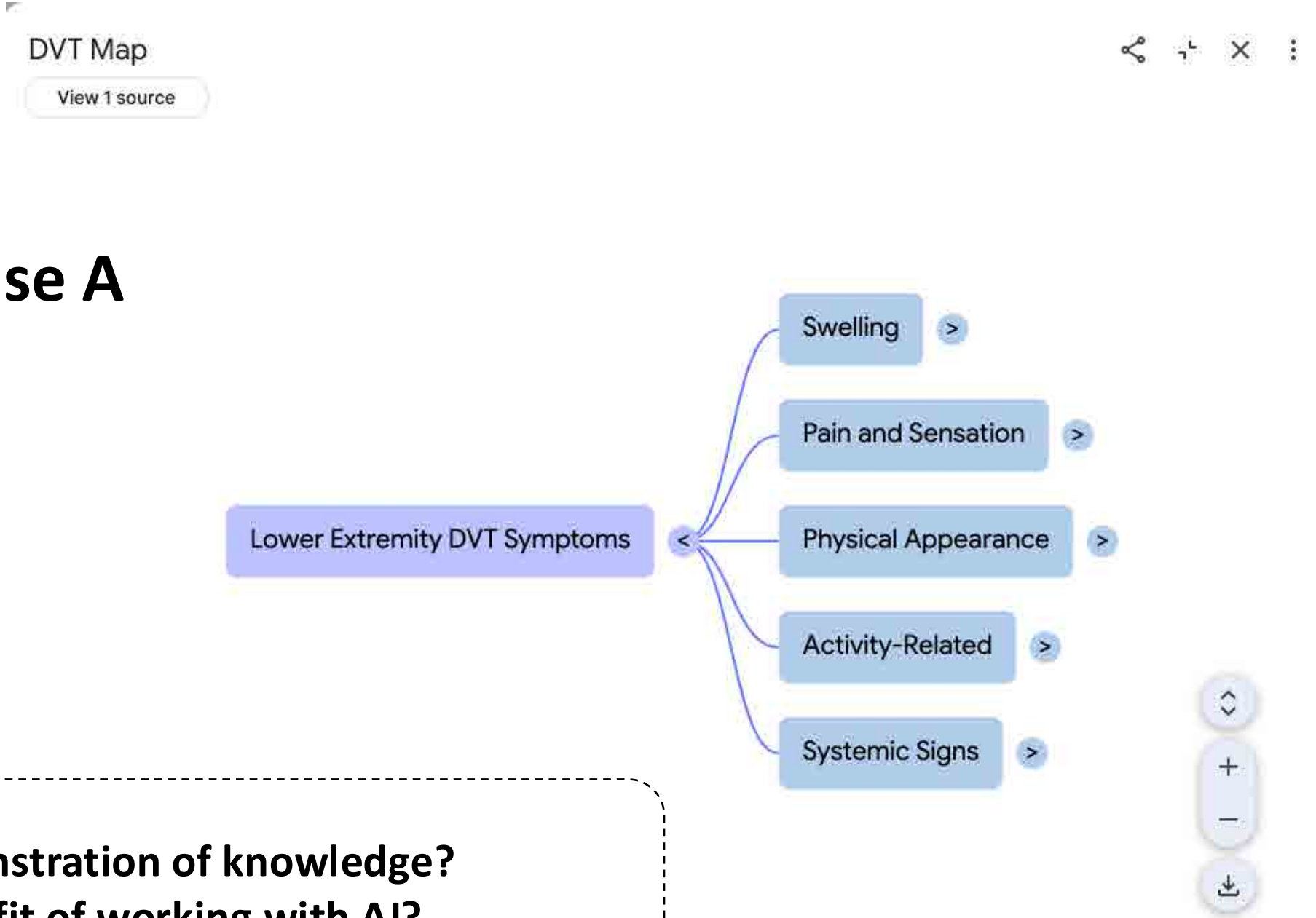
Create a mindmap for the symptoms of lower extremity DVT.

Symptoms

unilateral extremity swelling distal to the site of occlusion, pain, erythema of the involved site, slight fever, dull ache, and tightness or pain with walking.


Established knowledge
K+
Automated meaning-making
A-
A+
Augmented meaning-making
Exploring
AI tool capacity to create a mind map
K-
Emergent knowledge

AI response A



Deeper demonstration of knowledge?
Genuine benefit of working with AI?

Knowledge we bring

Example

clinical reasoning

visual resources

Prompt B1

Organise the following symptoms to show their typical **timeframe for onset and chronological appearance**

Stages:

1. 'Silent phase', 24-48 hours. Clot initiation behind venous valves.
Pathophysiology: Asymptomatic.

2...

3....

Type of relationship

&

clinical knowledge

Prompt as a demonstration of K

AI response B1

View 7 sources

Chronological Timeline of Lower Extremity DVT Symptom Onset

Progression from silent clot formation to systemic inflammatory response

Note: Clot progression depends on acute vs. sub-acute clinical context (e.g. trauma vs. immobility).

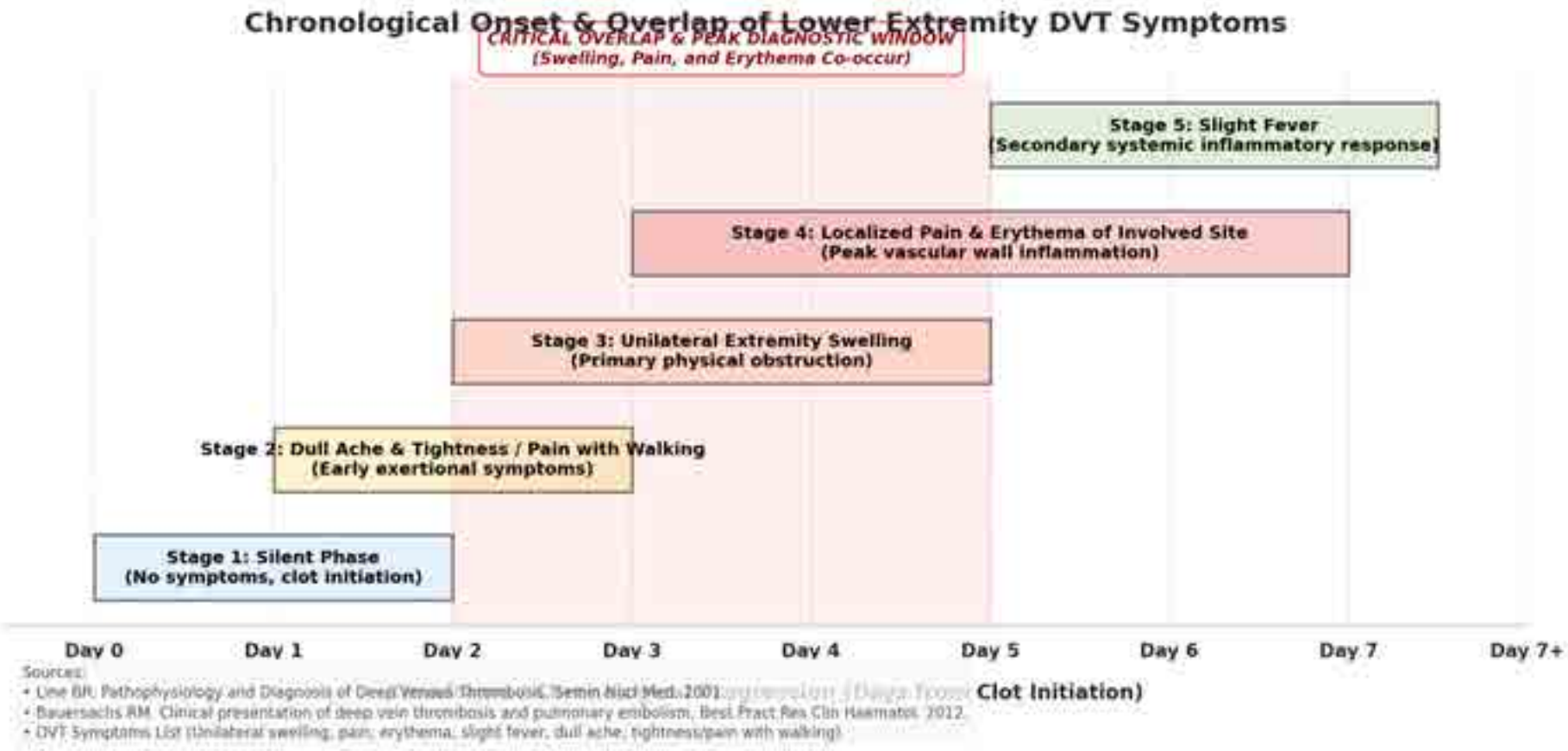
Sources: Line (2011); Wasenache (2021); Symptoms of DVT (2021); How Quickly Do DVT Symptoms Develop? (2024); Top Warning Signs (2024)

Prompt B2

Now make it vertical rather than horizontal.
Use something that looks like a bar graph (left to right) so that
we can see where the timeframe for stages and symptoms may **overlap.**

Type of relationship

AI response B2



Sources:

- Lee AY. Pathophysiology and Diagnosis of Deep Venous Thrombosis. Semin Nucl Med. 2001.
- Bauersachs RM. Clinical presentation of deep vein thrombosis and pulmonary embolism. Best Pract Res Clin Haematol. 2012.
- DVT Symptoms List (Unilateral swelling, pain, erythema, slight fever, dull ache, tightness/pain with walking)

Visual layout

Prompt B3

Keep the x axis labelling.

Create a Y axis with the stage numbering only.

Do not repeat stage wording within the graph

Make all wording within the shapes for stages fit within the shape (not overflowing).

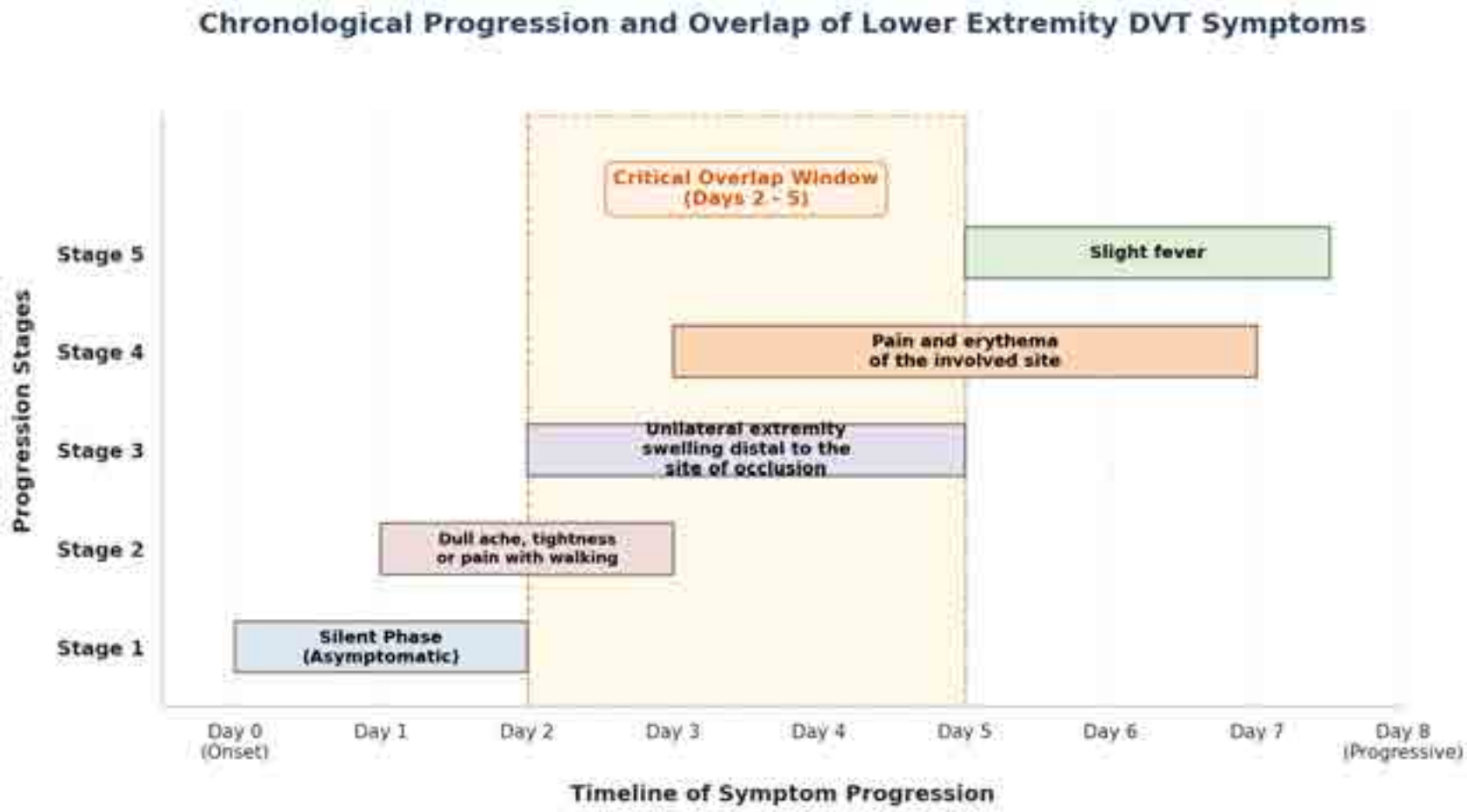
Create more white space between the x axis and source information.

Create more white space between the heading and the box with the critical overlap.

In the critical overlap box remove the text: swelling, pain, and erythema co-occur.

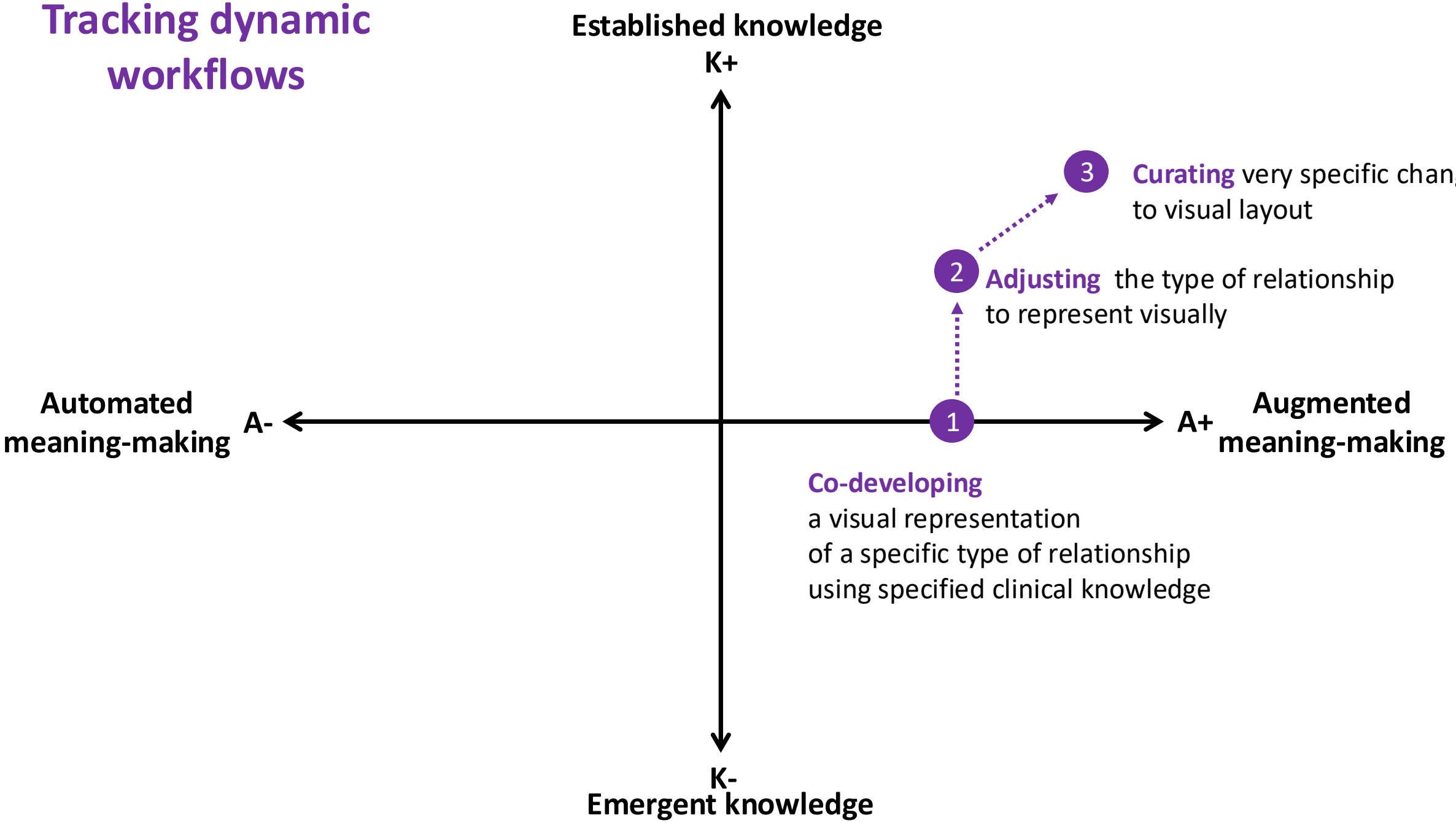
…

AI response B3

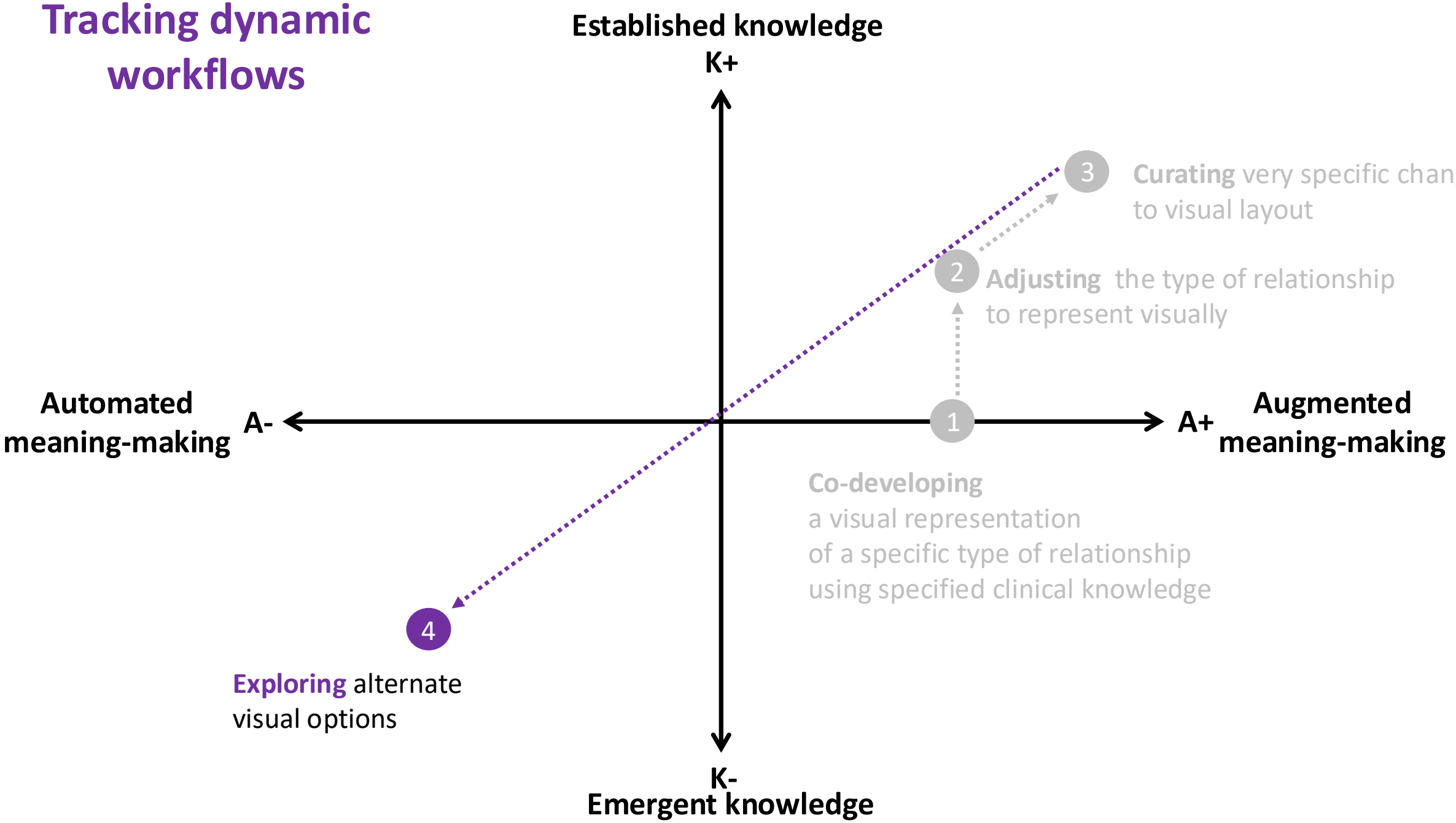


Sources: Dr. Bruce B. Lee, 'Pathophysiology and Diagnosis of Deep Venous Thrombosis' (2001) [1, 4]; Dr. Rupert M. Bauersachs, 'Clinical Presentation of Deep Vein Thrombosis and Pulmonary Embolism' (2012) [88]; Clinical guides: 'How Quickly Do DVT Symptoms Develop?' & 'Symptoms of Deep Vein Thrombosis'.

Tracking dynamic workflows



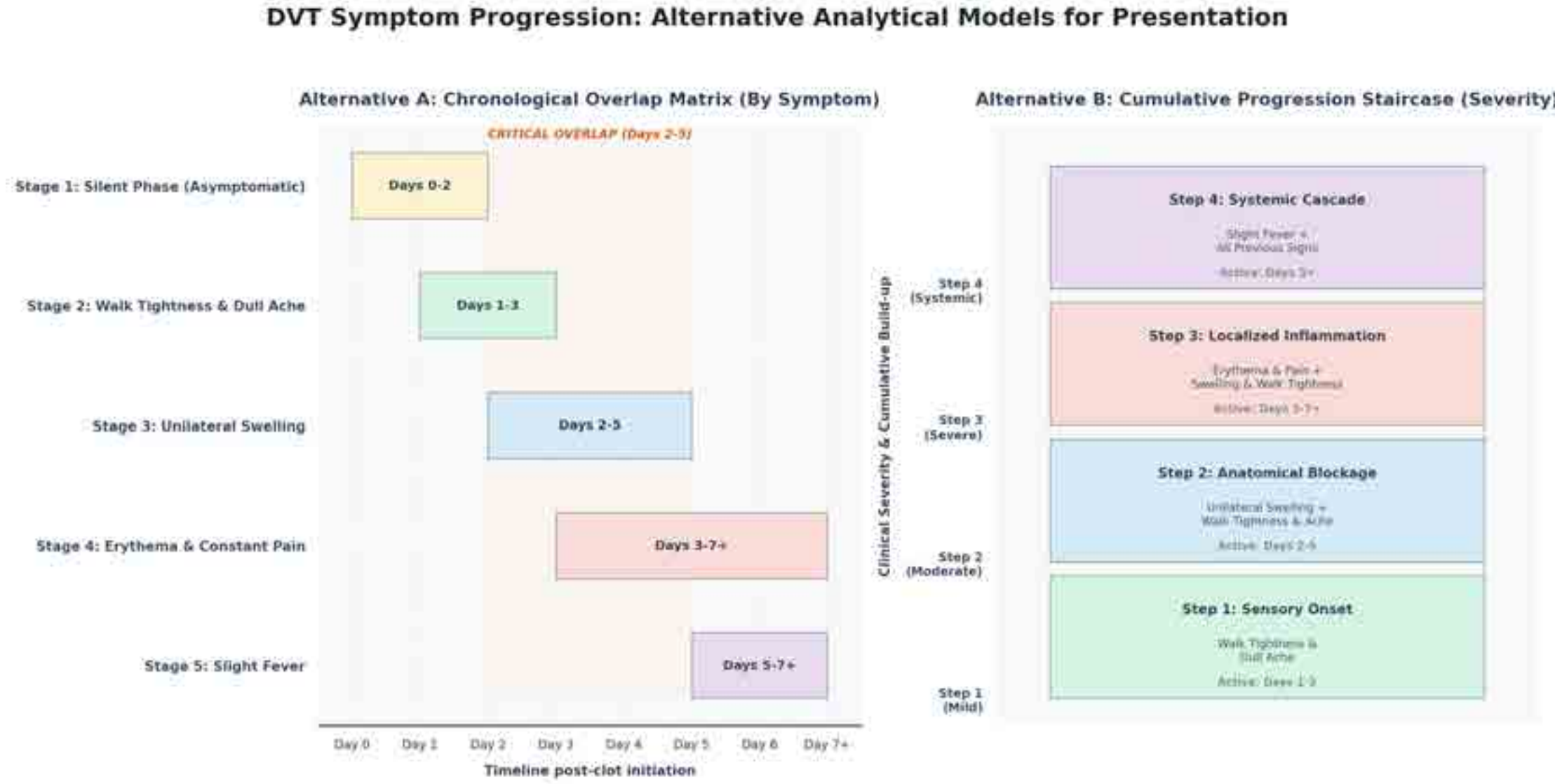
Tracking dynamic workflows



Prompt B4

Create two alternate ways to show the stages and their overlap.
Create a visualization of each that could be used in a presentation.

AI response B4



…cross-checking & reviewing

Prompt B5

Show me the explanation of stage 1 ‘the silent process’ in the article about how quickly DVT symptoms develop.

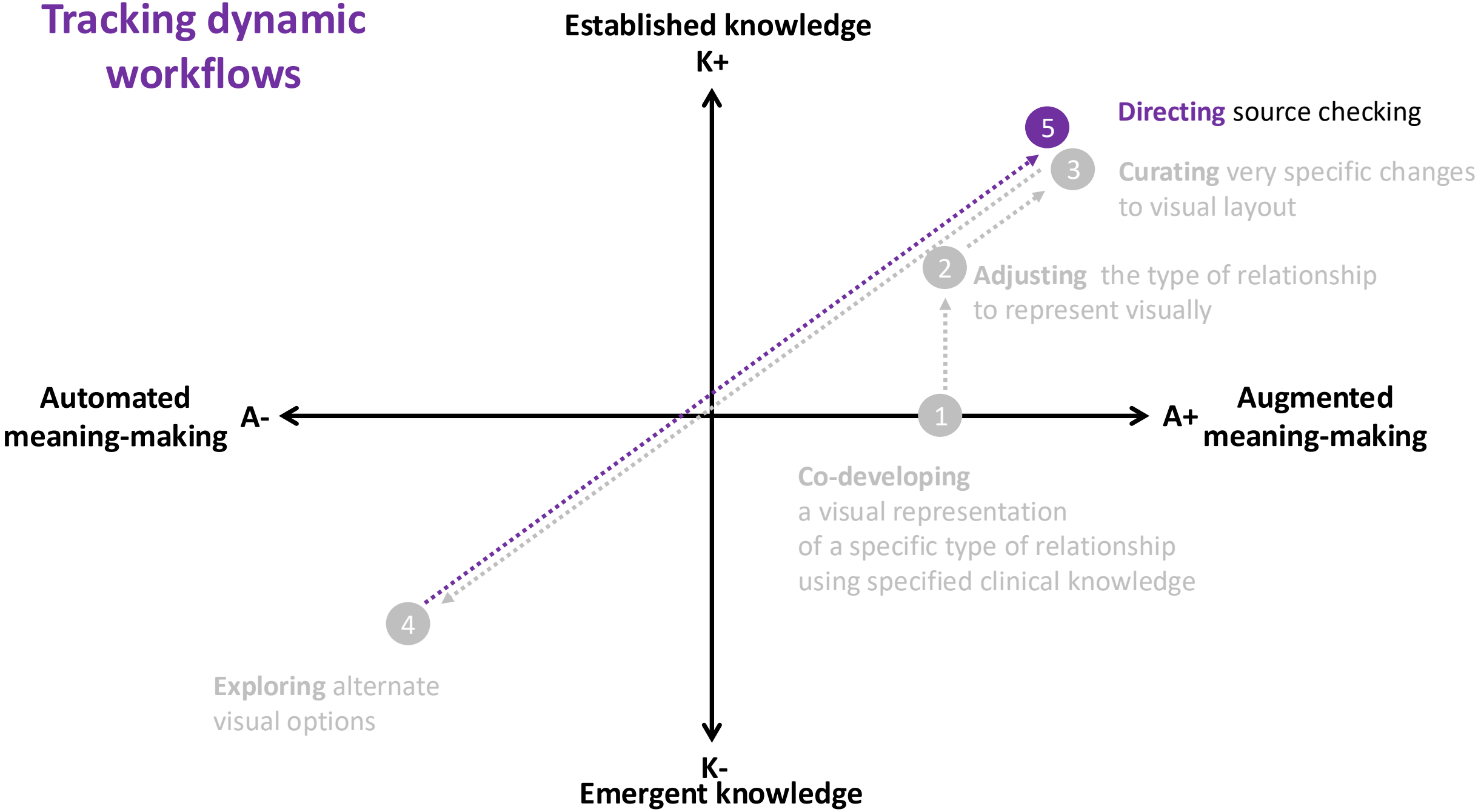
Don’t paraphrase or explain things. Just show me where to read.
I need to check the original wording.

AI response B5

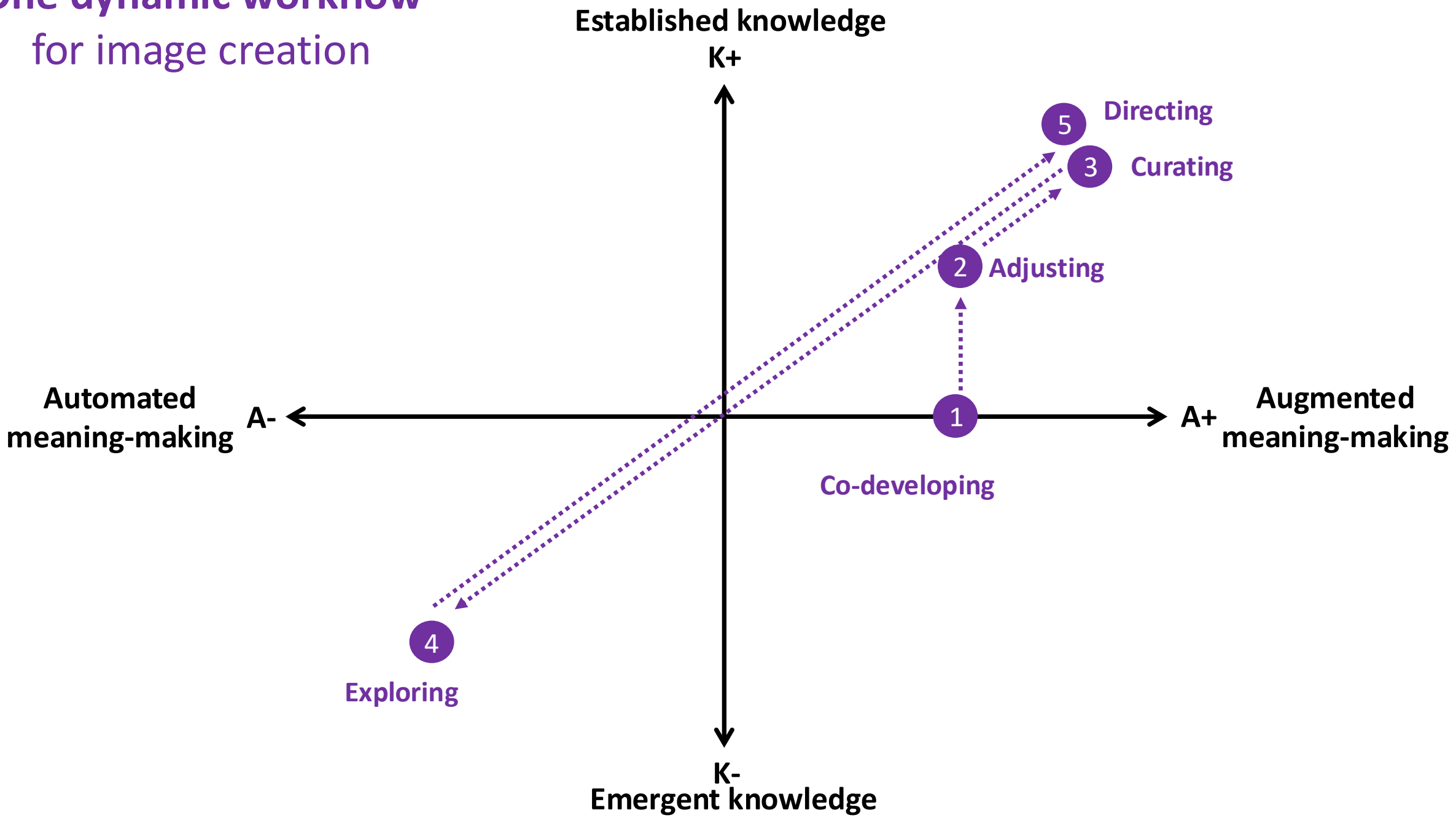
In the article **"How Quickly Do DVT Symptoms Develop?"**, under the heading **"The Biological Timeline of DVT Development"**, you can read the following exact text:

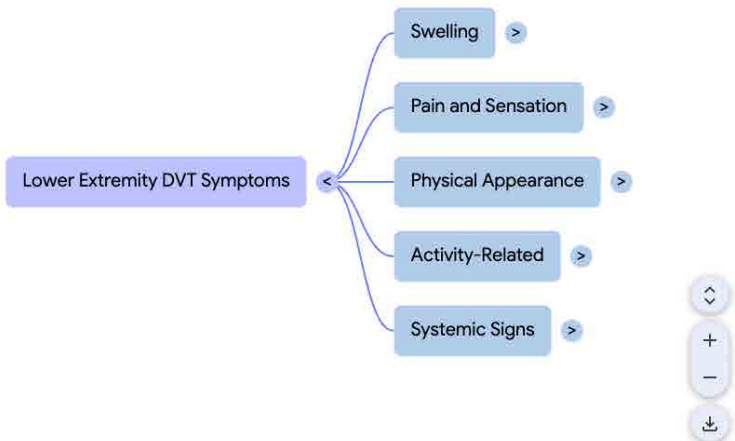
> **"The Biological Timeline of DVT Development**
>
> DVT symptoms can manifest as quickly as a few hours after a clot begins to form, but it more commonly takes 2 to 5 days for a blockage to become physically apparent. **The initial formation of a thrombus is a silent process.** It is only when the clot becomes large enough to impede blood flow or trigger an inflammatory response that the hallmark signs of pain, warmth, and swelling emerge."

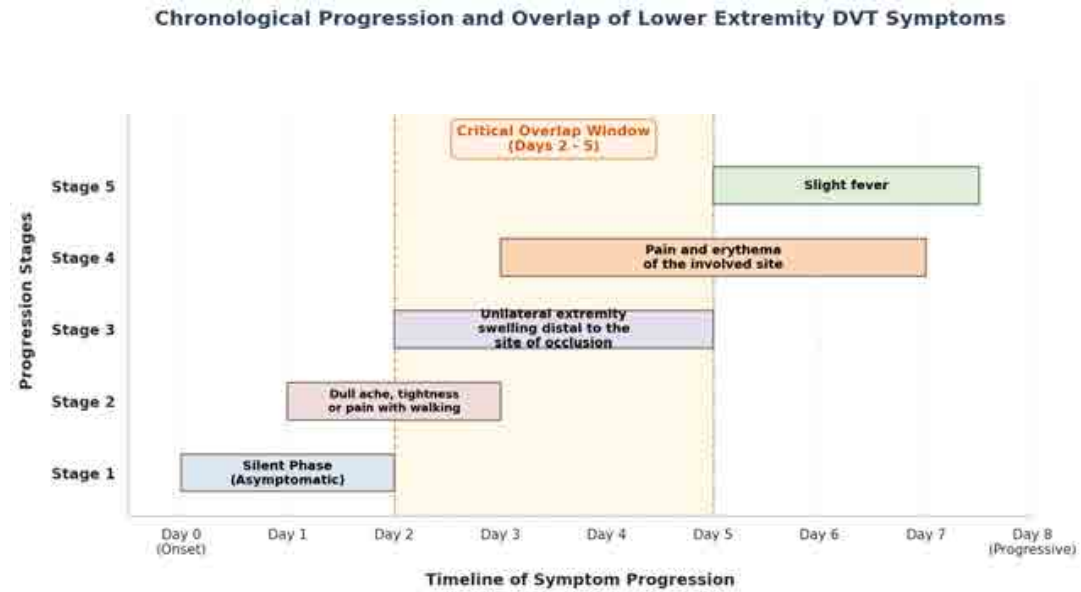
Tracking dynamic workflows



One dynamic workflow
for image creation



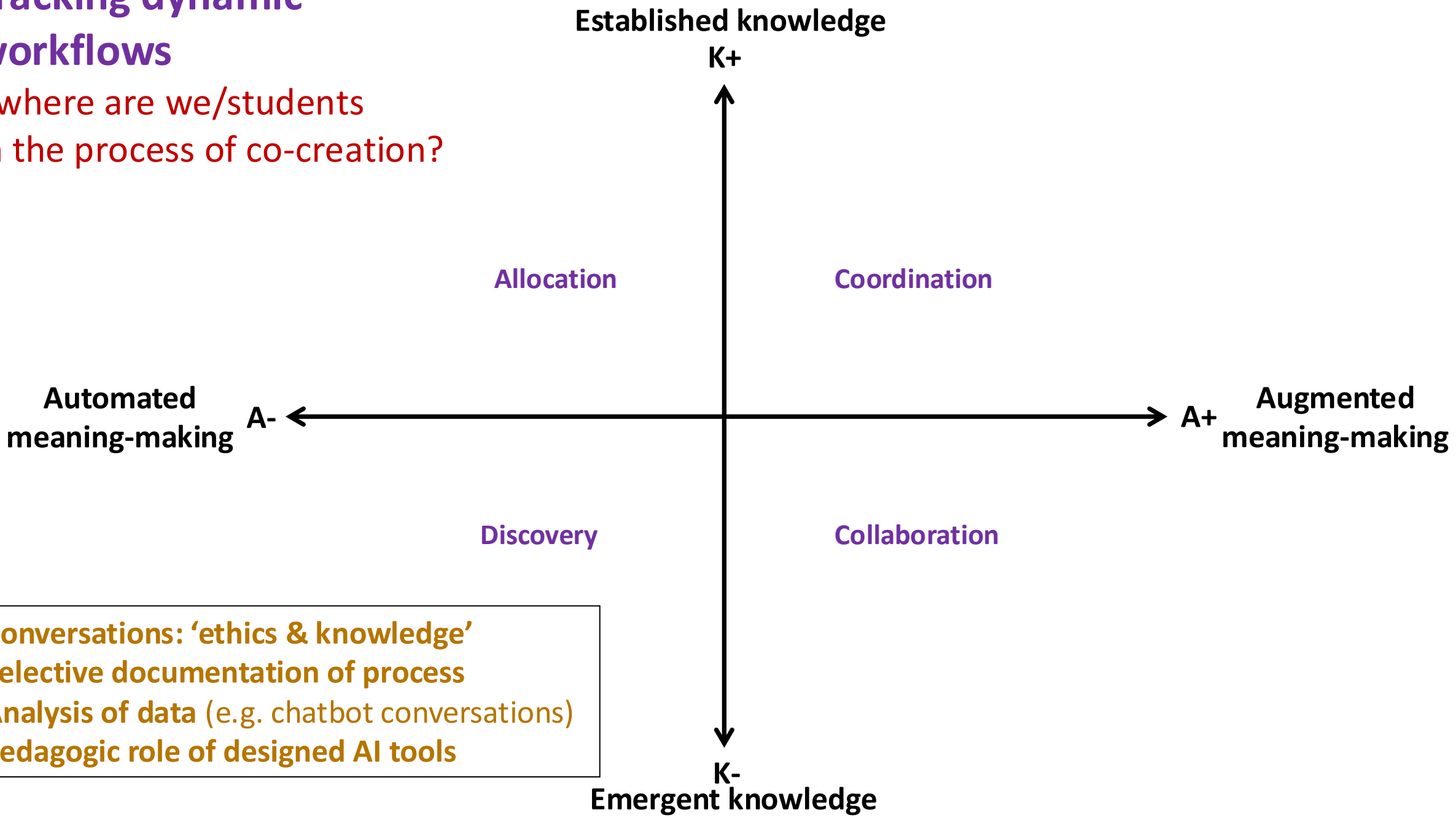




Sources: Dr. Bruce B. Lee, 'Pathophysiology and Diagnosis of Deep Venous Thrombosis' (2001) [1, 4]; Dr. Rupert M. Bauersachs, 'Clinical Presentation of Deep Vein Thrombosis and Pulmonary Embolism' (2012) [89]; Clinical guides: 'How Quickly Do DVT Symptoms Develop?' & 'Symptoms of Deep Vein Thrombosis'.

Tracking dynamic workflows

- where are we/students
in the process of co-creation?



Conversations: 'ethics & knowledge'
Selective documentation of process
Analysis of data (e.g. chatbot conversations)
Pedagogic role of designed AI tools

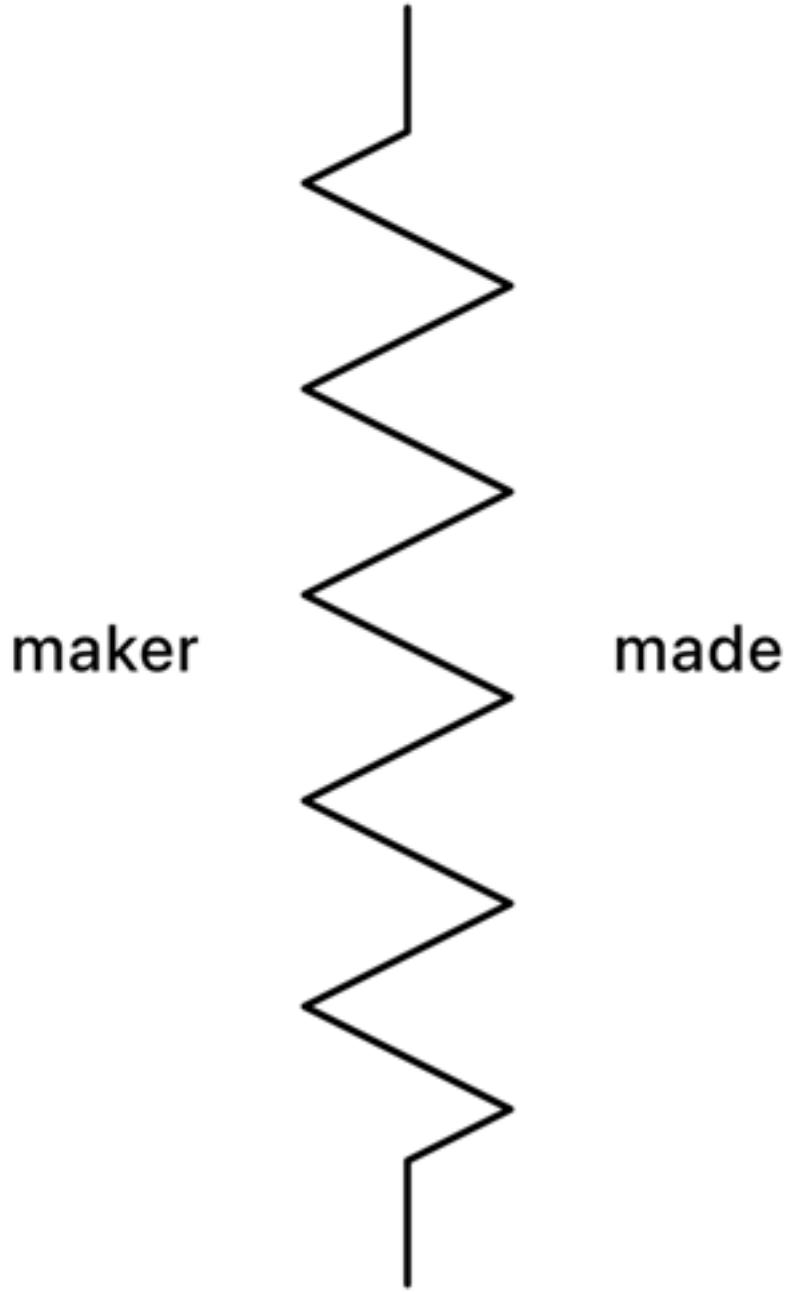


Image created with Gemini 3.1

References 1

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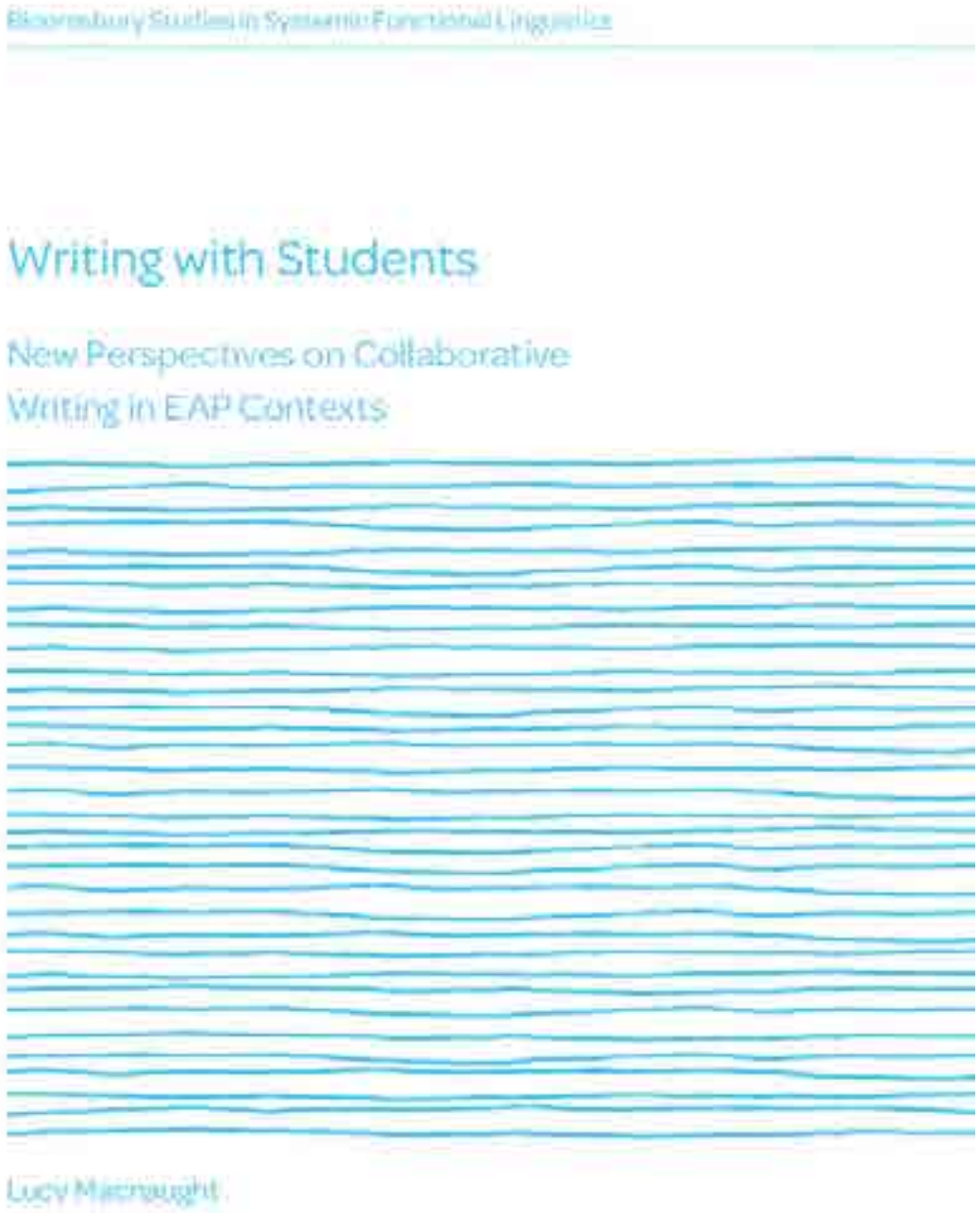

The foundation for thinking about applying knowledge in AI interactions and the importance of developing knowledge about language with students is detailed in this book (see chapters 1-2).

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Macnaught, L. (2024). *Writing with students: New perspectives on collaborative writing in EAP contexts*. Bloomsbury Academic.

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