

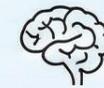
Step 1 — Define “Cognition Extension” (with AI)

AI extends cognition when it helps learners think bigger and deeper — without replacing their judgment.

It works when AI helps students:

hold more complexity • explore more possibilities •
test ideas faster • reflect more clearly

What it looks like in class



More complexity → students manage richer ideas, relationships, constraints



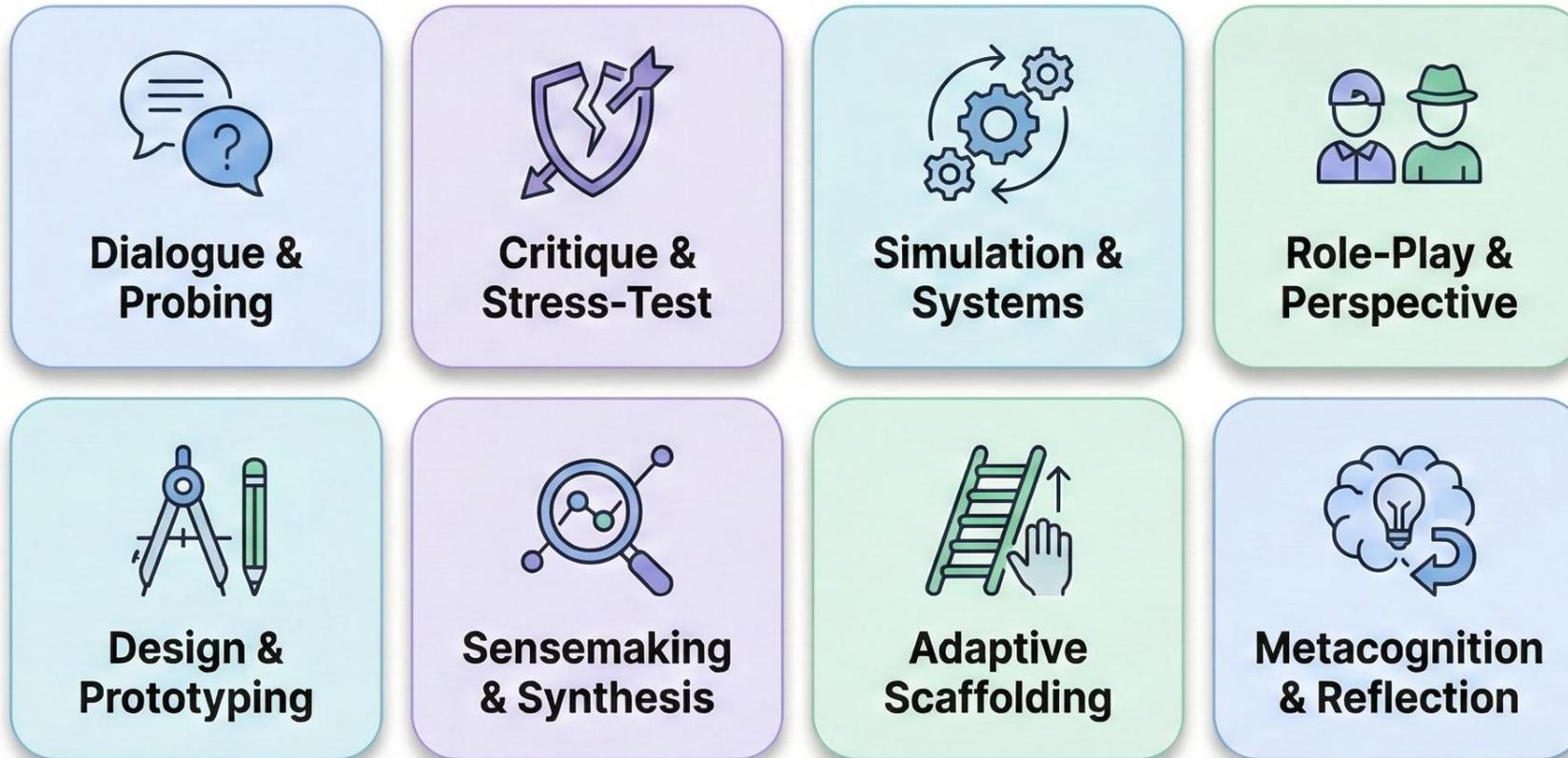
More exploration → students compare alternatives and perspectives



Better judgment → students justify choices, evaluate evidence, revise

Step 2 — How AI Extends Cognition: Different “Modes” of Thinking

AI doesn't extend cognition in one way — it can stretch thinking through multiple kinds of learning experiences.



What stays constant

No matter the mode...

 **Students do the thinking**
(they decide, justify, revise)

 **AI creates conditions for stretch** (questions, alternatives, scenarios)

 **Teachers orchestrate**
(task design, constraints, evidence of thinking)

Key takeaway: Same AI tool, different mode → very different cognition.

Step 3 — Build the AI Cognition Roadmap (Short Run → Medium Run)

We map how AI can extend cognition in your context over two horizons.

What the roadmap captures:

- ✓ Cognitive shift: what becomes possible in student thinking
- ✓ Learning experience: what students actually do
- ✓ Teacher role: how we orchestrate and keep student judgment central

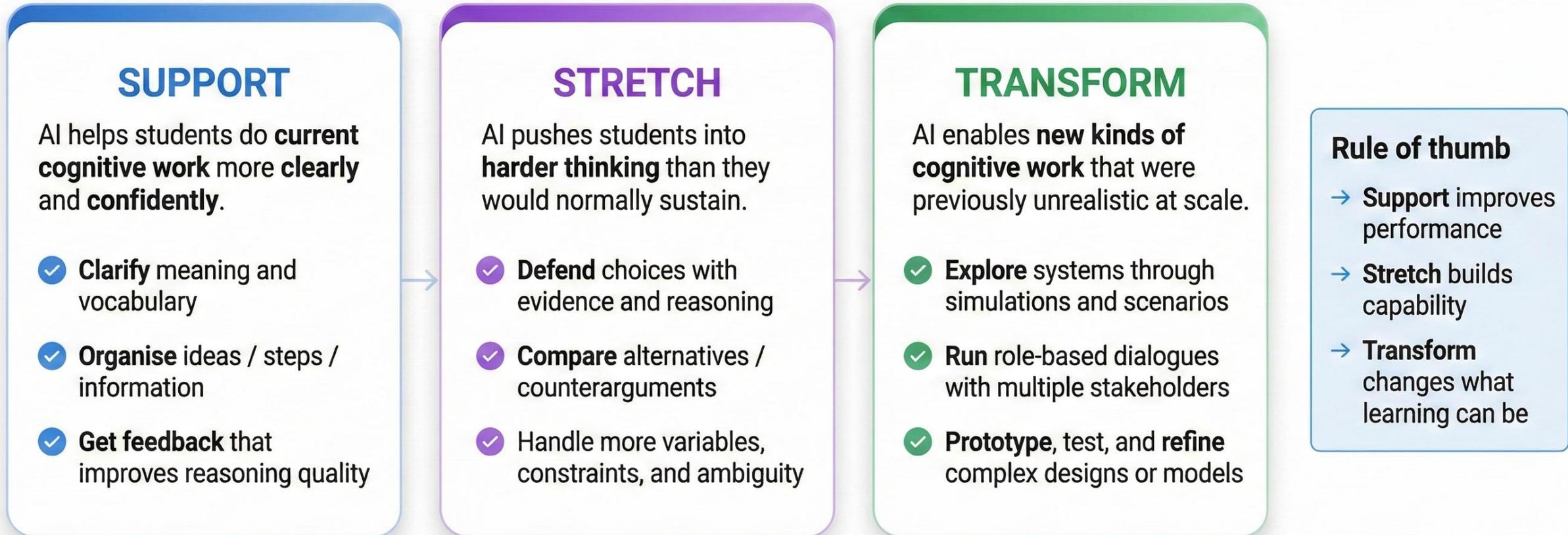
Short Run (0–12 months)	Medium Run (1–3 years)
<ul style="list-style-type: none">○ Teacher-orchestrated use (high structure, clear prompts, guided tasks)○ Cognition stretch inside existing units (same syllabus, deeper thinking)○ Visible thinking artifacts (explanations, decisions, justifications, revisions)	<ul style="list-style-type: none">○ Richer modalities + workflows (voice, images, data, multi-step projects)○ More complex cognition is feasible for more students (not just top performers)○ New task types become realistic (simulation, critique panels, design studios, inquiry at scale)



Roadmaps are hypotheses: predictions we can test in classroom practice.

Step 4 — Depth of Cognitive Extension: Support → Stretch → Transform

Not all AI use extends cognition equally. We map how far cognition is being extended.



Goal: move beyond “support” toward stretch and transform where appropriate.