# Stop Telling People to Upskill

*Why capability development in the AI era needs stimulus, Range Velocity, and an end to silent skill hollowing.*

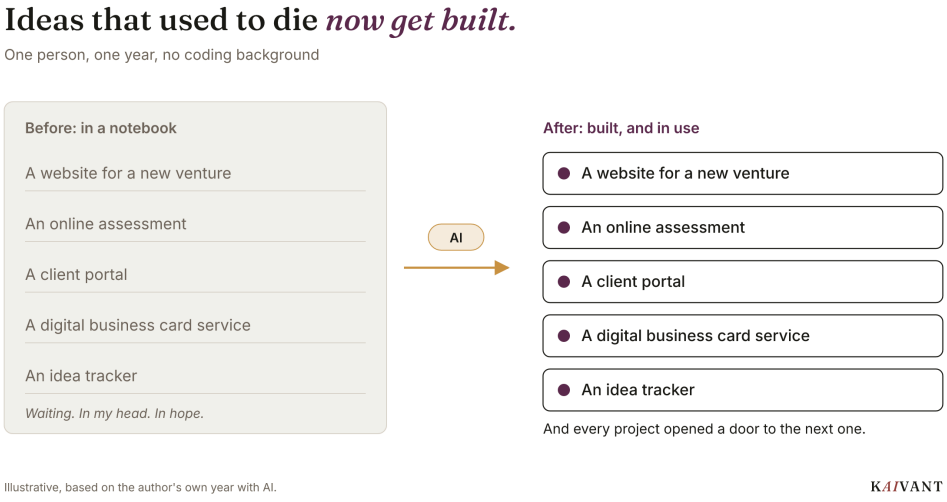
Michiel R. de Boer · Founder and Chief Architect, KAIVANT® · Co-owner and Managing Director, MindMagine.
For: executive leaders, L&D directors, HR leaders and capability development specialists.




## 1. Beyond Augmentation vs. Substitution: The Reality of Extension

AI can make people deeper, wider, or quietly weaker. Most organisations currently lack the visibility to see which of these three is happening in their workforce.

Over the past twelve months, I delivered around ten projects that were all about code, without any coding background. Websites, applications, assessment platforms and systems that run parts of my business. This did not come from formal retraining. AI gave me a direct way to turn ideas that used to stay in my notes into working results.



In most organisational discussions, AI adoption is sorted into two boxes:

- **Augmentation:** does AI help people do their existing work faster or more accurately?
- **Substitution:** does AI take over tasks and replace existing roles?

Neither box captures what is actually happening on the ground. When people use AI to step into entirely new domains, such as designing software, analysing complex data or setting up security, without any formal background, they are experiencing **Extension**. AI does not merely refine what they were. It opens capability areas they never had.

> **Strategic question for leadership**
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> *Extension expands human reach into new domains. But it raises a critical question for HR and L&D leaders: are employees genuinely developing their own capability, or are they borrowing execution power that disappears the moment AI is taken away?*

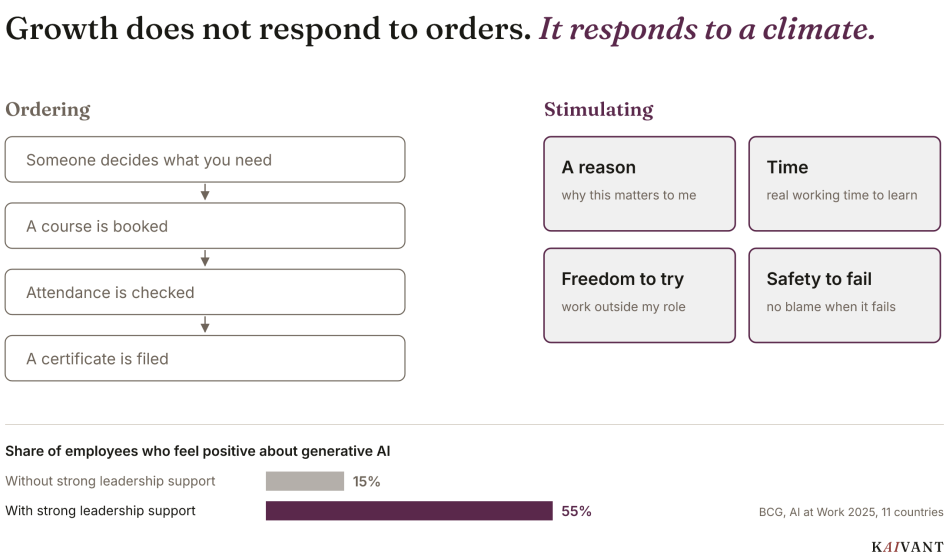
## 2. The Paradox of 'Ordering' Skill Development

According to the World Economic Forum, employers expect **39% of core workforce skills to change by 2030**. About 59 out of every 100 workers will need training to keep pace, and 11 of those 59 are unlikely to receive it.

The standard executive reflex is to treat these numbers purely as a training mandate: *build more courses, make enrolment mandatory, track completion and expand L&D budgets.* This approach comes from an era when the skills you needed were predictable and changed slowly.

Capability development today does not respond well to orders from the top. Real growth with AI responds to a climate, and leadership creates that climate:

- **Leadership and sentiment (BCG):** in a study of more than 10,000 employees across 11 countries, the share of workers who feel positive about generative AI rose from 15% to 55% with strong leadership support. Yet only about a quarter of frontline employees receive that support.
- **The training gap (Cedefop):** among more than 5,000 workers in 11 European countries, 61% expect to need new skills because of AI within five years, but only 15% had any AI training in the past year.
- **Culture as the enabler (Nature):** a large national experiment in US schools, published in Nature, found that a growth programme improved results only where the surrounding culture supported it. Placed in an unsupportive environment, the same programme achieved very little.

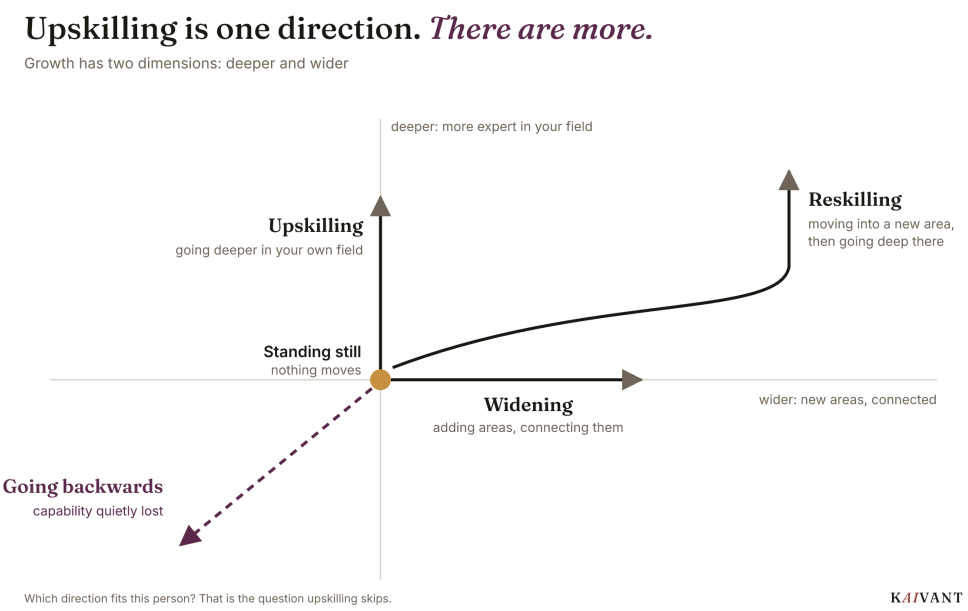



Leaders must shift from **ordering** compliance to **stimulating** exploratory learning: giving people a reason, real time, the freedom to try and the safety to fail.

## 3. The Directions of Capability Movement

When leaders demand 'upskilling', they assume a single direction: everyone should go deeper into their current specialisation. In reality, capability grows in two dimensions, deeper and wider, and moves in several distinct directions:

| Capability direction | What it means in practice |
|---|---|
| **Upskilling (Deepening)** | Going deeper within an existing specialisation. Building advanced expertise, mastering nuance and refining complex domain knowledge. |
| **Widening (Adding areas)** | Adding new areas alongside core expertise and connecting them across disciplines, for example a marketer building data models or an HR specialist designing automation. |
| **Reskilling (Pivoting)** | Moving into an entirely new domain, then building depth in that new area as roles evolve. |
| **Standing still (Stagnation)** | No growth or adaptation. Remaining static while the work and the technology move on around the role. |
| **Going backwards (Erosion)** | Core capability is being lost. Output may still look high thanks to AI, while understanding and judgement quietly weaken underneath. |

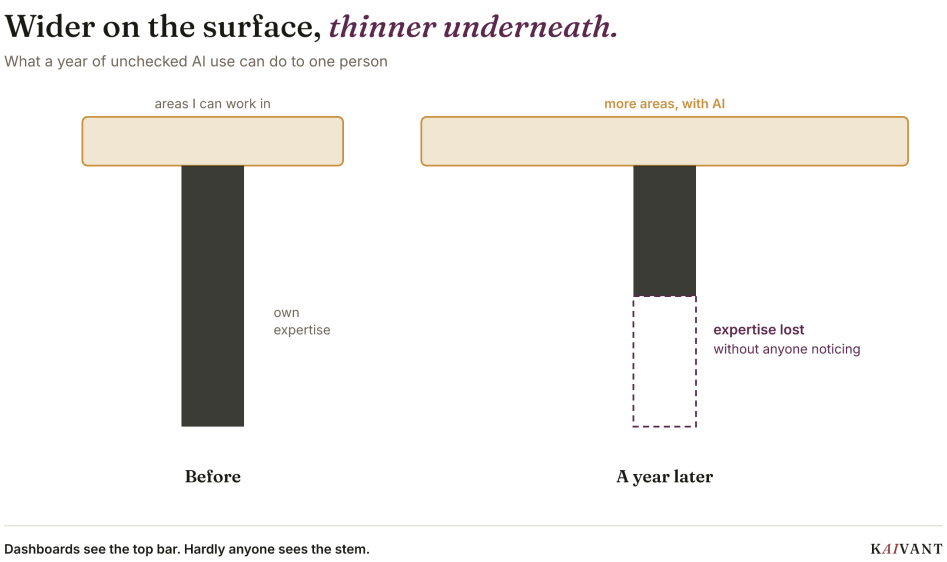



Crucially, major global and national workforce reports split change into only two buckets: **upskilling** and **redeployment**. Neither widening nor standing still is tracked on standard dashboards. As a result, L&D and HR leaders cannot see where real growth, or real risk, is taking place.

## 4. The Hidden Risk: Hollowing and Silent Skill Depletion

The most alarming risk in AI adoption is **hollowing**: people look more effective on the surface (faster work, more areas, more output), while their own expertise quietly weakens underneath. Wider on the surface, thinner underneath. Research from very different fields shows the same pattern:

- **Secondary school maths (Turkey, PNAS 2025):** students who practised maths with a standard AI chatbot scored higher during practice. But when tested without AI, they scored **17% worse** than students who had never used AI at all.
- **Clinical expertise (Poland, Lancet Gastroenterology and Hepatology 2025):** after routine AI support was introduced, experienced endoscopists working without it saw their adenoma detection rate fall from **28.4% to 22.4%** within months. This AI was not generative AI, but the pattern is the same.
- **Performance versus learning (BCG 2024):** consultants without a data science background used AI to do data science work and reached 86% of the data scientist benchmark. Yet a surprise test afterwards showed **no measurable learning**.
- **Software engineering and debugging (Anthropic research, 2026):** junior engineers learning a new programming library with AI scored about 50% on a test of understanding, against 67% for those who learned it by hand. The largest gap was in **debugging**, exactly the skill needed when systems fail.



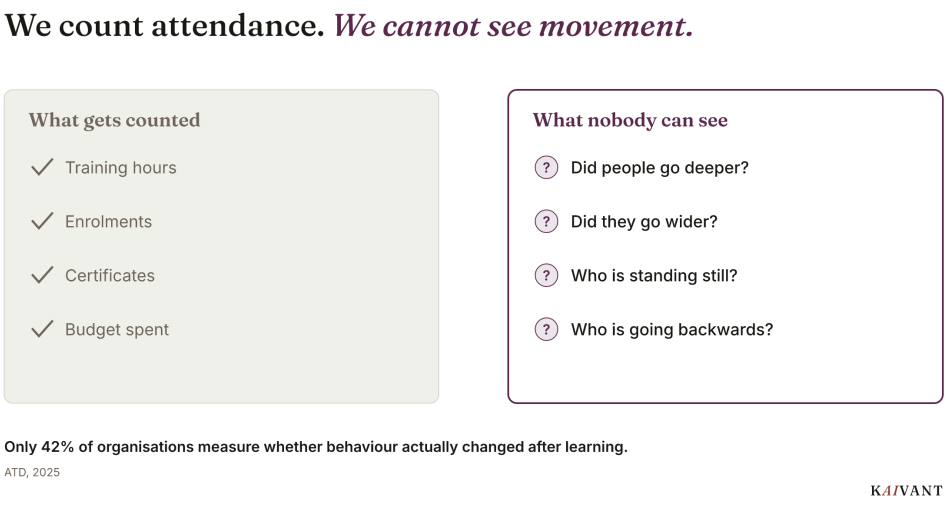

### The overconfidence trap

*Hollowing is made worse by overconfidence. Research from Aalto University in Finland shows that AI users overestimate their own performance. In a developer trial by METR, experienced developers were 19% slower with AI while believing they were 20% faster.*

Depletion is not an unavoidable cost of progress. It is the result of unguided use. In the Turkish study, students who used an AI tutor designed to guide understanding, rather than give answers, largely avoided the loss. When organisations let capability erode without looking, that is a decision made by default.

## 5. Innovation Waste and the L&D Measurement Blind Spot

HR and L&D face a persistent challenge: they track training activity rather than real change in capability. **According to ATD, only 42% of organisations measure whether behaviour actually changes after training.** In Malaysia, HRD Corp approved about US$600 million in training support in 2025, and what gets reported is mainly the input: money, places and enrolments.



Meanwhile, a large innovation opportunity is being wasted. When people widen with AI, the lines between departments start to dissolve. In a field experiment at Procter & Gamble, individuals working with AI produced balanced solutions that combined technical and commercial thinking, whatever their own background.

However, when someone outside a specialist team builds a valuable solution with AI, most organisations have no route to test, govern and scale it. The innovation stays trapped as isolated 'shadow AI', or disappears when the person moves on.

Research with 640 entrepreneurs in Kenya also shows that, left unguided, AI benefits those who are already strong (about 15% more profit and revenue), while those who are struggling do about 8% worse. **Growth cannot be left to chance. It needs deliberate leadership.**

## 6. Introducing Range Velocity: Making Growth Visible

To close this blind spot, KAIVANT® is introducing **Range Velocity**: a new dimension that shows how fast, and in which direction, a person's capability range is moving.

> **KAIVANT® definition**
>
> *Range is the set of domains in which a person can think, decide and produce. Velocity is the rate, direction and authenticity of the change in that range over time.*

Range Velocity rests on four principles:

- **Two directions, valued equally:** depth (going deeper) and width (going wider) are measured separately and valued equally. What matters is the fit with the person and the needs of the organisation.
- **Owned growth versus borrowed range:** if someone completes work with AI but cannot explain, change or judge it without AI, that is 'borrowed range', not real growth. Only capability that is owned and actually in use counts.
- **Movement in both directions:** Range Velocity can go negative. Standing still and erosion are shown openly, and hollowing is flagged, so they cannot hide behind high output numbers.
- **Growth climate:** at organisation level, it also looks at whether leaders give real time, psychological safety and a clear route to turn what individuals build with AI into assets for the organisation.

Individual results stay private to the individual. Organisations, HR and L&D see only the combined picture of groups.

## 7. Four Shifts for Monday Morning

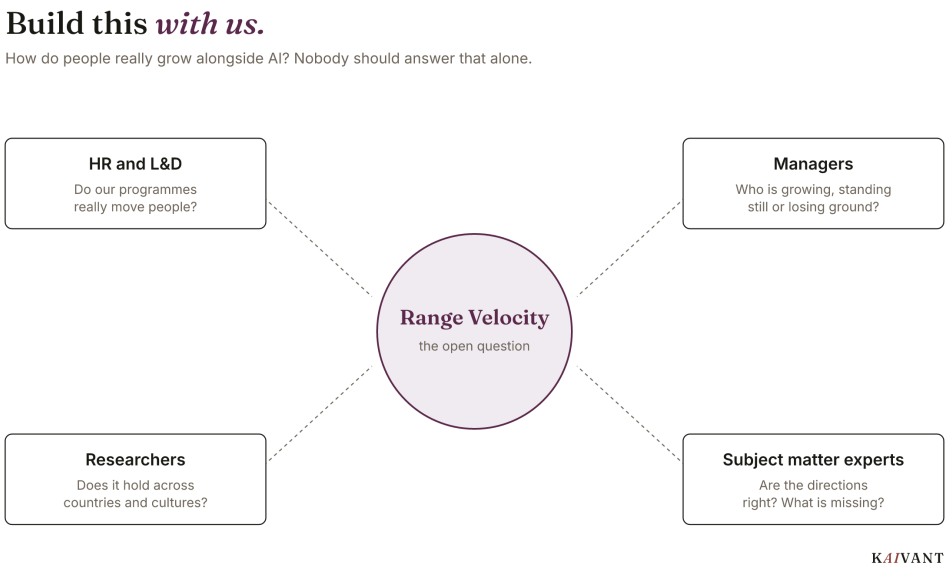
Leaders do not need new systems to start. Four leadership shifts can begin now:

| Leadership shift | How to put it into practice |
|---|---|
| **1. Diagnose fit before ordering** | Replace blanket upskilling. Ask each person: should you go deeper in your specialty, widen into adjacent areas, or move into a new area altogether? |
| **2. Stimulate and build routes** | Give dedicated time for cross-functional work with AI. Create a light route to test and adopt solutions that employees build with AI. |
| **3. Measure movement and application** | Move L&D metrics from attendance hours and certificates to real application: what can people do now that they could not do a year ago, and is it in use? |
| **4. Refuse silent depletion** | Have people regularly do core work without AI. Encourage teams to use AI as a tutor that explains, not an answer generator, to keep their own skills strong. |

## 8. Call to Action: Shape the Future of Capability Development

Range Velocity is an evolving research initiative. KAIVANT® invites executive leaders, L&D practitioners, HR directors and researchers to help shape it:

- **HR and L&D leaders:** take part in pilots that track real workforce movement over 12 months.
- **Executives and managers:** share cases of people widening, standing still or hollowing out within your teams.
- **Researchers and academics:** help validate the measures across countries and cultures, especially by adding evidence from Asia.



> **Collaboration and research invitation**
>
> *Growth alongside AI is a choice leaders must actively make. To contribute to the KAIVANT® research or take part in a pilot, connect directly with Michiel R. de Boer, or join the discussion in the comments.*

### Your next step

Want to see where your own organisation stands today? Start with the free book **AI-Native Transformations in the Workplace**, or take the free, private Kaivant-I to see whether AI is building or eroding your own capability. Both are at kaivantscore.com.

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### About the author

*Michiel R. de Boer is the founder and Chief Architect of KAIVANT®, and co-owner and managing director of MindMagine. For more than 30 years, he has helped organisations internationally with the best practices of programme, project and process management, governance and leadership. Based in Kuala Lumpur, he now focuses on helping organisations everywhere become truly AI-native, without losing the human capability that makes them work.*

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