



Responding to the Illusion of Learning

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The 'Learning' Challenge

- The conditions for our students to learn are surprisingly delicately balanced.
- Many impediments to constructive learning
 - Can't learn/correct what they already 'know' for certain;
 - Or if there is nothing to build on;
 - Or if they think they can't
 - Or if the environment overwhelms with distractions, and on and on
- Plus: the who, what and how of learning for knowledge/skill/competence are varied and variously mixed: No two learners are alike, or the same day to day etc.
- Challenges persist despite mountains of research; GenAI amplifies many challenges
- Available 'solutions' can both 'work' and have unintended consequences!

This Session

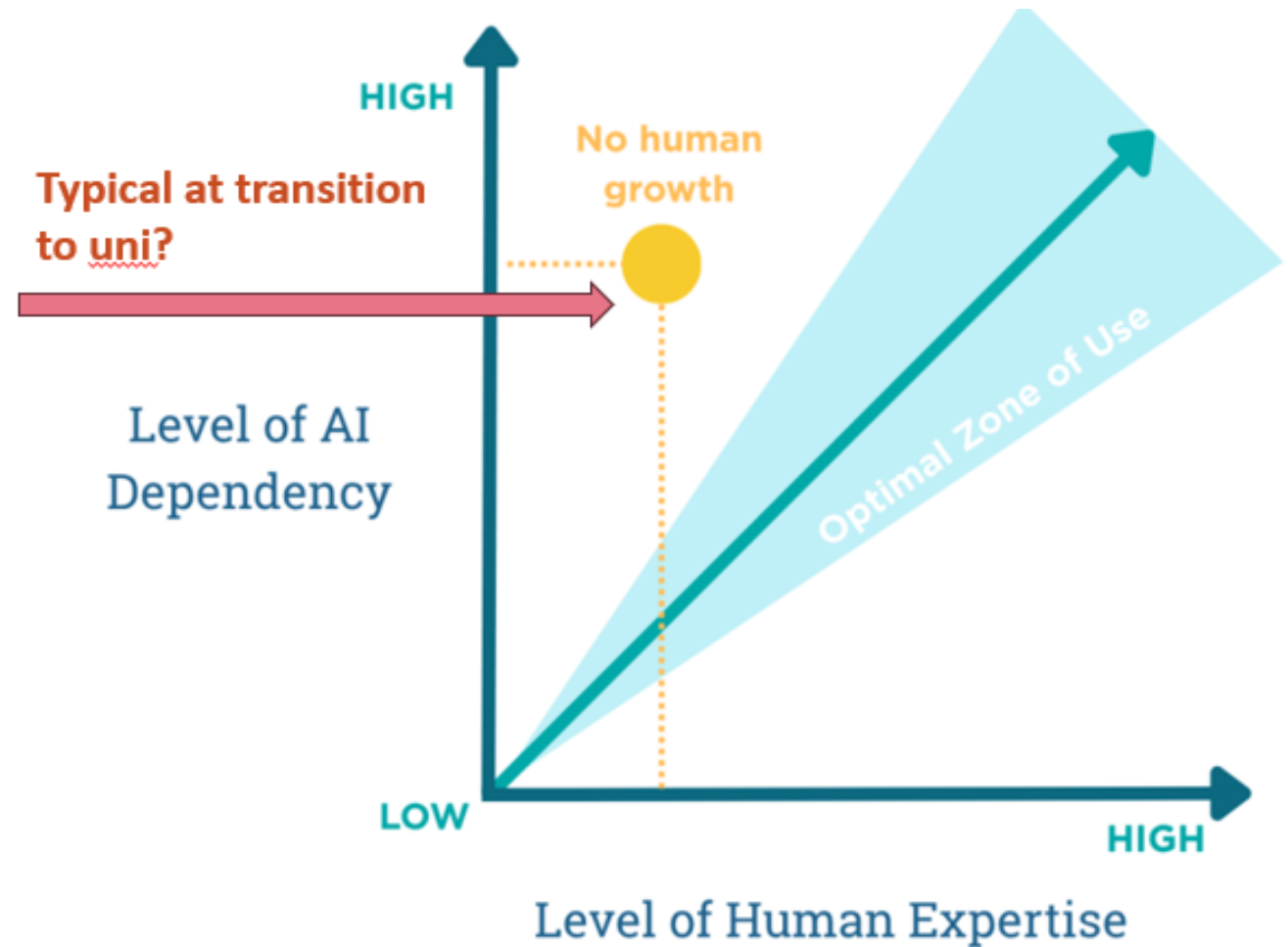
- Among the challenges: The ‘illusion of learning’
- What is this?
- What has AI got to do with it?
- Some mini-experiences I have tried to tackle the illusion
- For discussion: Your ideas and observations

The Illusion of Learning

- Pre GenAI: **Unproductive success:** students “maximize performance in the shorter term without maximizing learning in the longer term,” creating “an illusion of learning” (Kapur, 2016)
- **True beliefs are not the same as understanding**
- AI-related exacerbations:
 - Threats to retention, internal motivation, etc
 - AI does it → student decides they know how to, and can, do it
 - Students avoid the stress of learning, which is masking or rewarding
 - Feedback may be overlooked or misinterpreted

AI Dependency to Human Expertise Correlation

Blue wedge is 'Optimal Zone of Use'



)<https://www.linkedin.com/pulse/ai-use-human-expertise-correlation-why-must-scale-skill-laura-bain-dcdrc/?trackingId=JRMYNv9ZJqitntVOq7V7lQ%3D%3D>

Only Connect

- GenZ ~ 13 to 28 years old
- Exhibiting a blank/expressionless presentation in what we may expect to be an interactive exchange: the GenZ face/GenZ stare
- Reasons (part courtesy of Gemini AI):
 - Overwhelm and anxiety; emotional self-protection
 - Online influence; lack of opportunities for live interactions
 - Stress in work and educational settings (feeling always ‘on’; reluctant to ‘dance in public’)
 - An ironic/created ‘authenticity’; not rude

Curriculum & Delivery

- Students have to (1) actually learn and (2) learn the ‘right stuff’
- Curriculum challenges:
 - AI abilities in, other tasks out
 - Necessary content shifting rapidly
 - Establish relevant foundations for new learning
 - Convince students in the face of change and uncertainty
 - Avoid the paternalistic downsides of rational arguments or ‘bad’ psychological manipulation or (over)reliance on old methods

Create Demonstrative Experiences

- Lean into ‘experiential learning’; create revelatory moments in the curriculum where learners have to do stuff, not just hear about it or watch it
- Example: Think of a question for which you already have some sense of the answer. You want to gain some new or surprising idea
- Keep prompting GenAI until you are satisfied the result is as *concise, on-point, and as relevant as it can be* (even if this point is never reached to your satisfaction)

OK: So What is “Insight”

- A Copilot session started well, but went off track, shifting from a simple, but solid definition to confusion between ability and product, and then to a banal illustration of finally ‘getting’ a maths concept.

Debrief

- I chose an objective for which I hypothesised AI would fail, but set this as an experiment where students were ‘free’ to explore (and potentially prove me wrong)
- An opportunity to unpack what we mean by insight or surprise and its role in learning
- Connecting experience, reflection and conceptualisation as learning
- (Open use of AI demonstrates my ‘high-trust’ attitude)

Another Experiential Example

- Context
 - Students don't (like to) read
 - Internal motivation under attack from 'ease' of AI
- Experiment:
 - Assigned reading and created a Notebook.LM 'deep dive' podcast
 - Class secretly sorted themselves

Climate change adaptation in public policy: frames, fire management, and frame reflection

Haven't read it: Jot your answers while listening

- What do frames do?
- How can policy analysts use frames?
- What is framing?
- What is the relationship between stakeholders and frames/framing?
- What is critical frame reflection?

Have read it: Listen for meaningful differences

- What did you pick out differently?
- Any inconsistencies or gaps?
- What further questions occur to you?
- What else did you take from the article?

Confront AI Jargon

- Prominent ‘problems’ with Gen AI have human analogues
 - degenerative thinking (cycling own data into outputs; rare data become rarer)
 - erosion of diversity (vocabulary shrinks, bias in data amplified; data pertaining to minorities lost), and
 - hallucination

AI Hallucination

- AI Hallucination: “A phenomenon wherein a large language model (LLM)—often a GenAI chatbot or computer vision tool—perceives patterns or objects that are non-existent or imperceptible to human observers, creating outputs that are nonsensical or altogether inaccurate.”
- <https://www.ibm.com/topics/ai-hallucinations>

Human Hallucination

- A false perception through one of the senses
- “The brain has ideas of its own about what the world is like, and what makes sense; those ideas can override what the eyes (and other sensory organs) are telling it.
- “Perception is active and subjective – a brain-generated hallucination: one influenced by reality (signals from the senses), but nonetheless, a hallucination.”

AI Training Data

- LLMs generate a response to prompts from scratch based on the parameters the model created from its training data (and other data accessed to complete prompted tasks)

Human Training Data

- A chatbot can report feeling happy or sad, but only because such phrases are part of its training data. It will never know what happiness and sadness *feel* like.
- But what does it mean to know what sadness feels like? . . . We have been taught to think that we humans have direct insight into our inner world, insight unmediated by concepts that we have learned. Yet after learning from Shakespeare how the sorrow of parting can be sweet, we discover new dimensions in our own experience. Much of what we “feel” is taught to us.

Main Messages

- High-quality, diverse data inputs are essential for high-quality outputs
- Human brains and machine brains can be complements
- But both are both subject to finding patterns based on (highly) selective sets of available data and inherent process features
- Humans need to continue to maintain and update their internal data stores

Conclusions

- Even when students use AI (whether required, accepted, or discouraged), the focus needs to be on the PERSON'S EXPERIENCE and not on their PRODUCTS
- Knowledge isn't merely a 'thing' that can be instilled, developed, 'applied', etc but an interaction of a person with a learning situation
- Since learning happens to someone, in some context, part of our job is to help learners unpack the elements and tensions in learning

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- ChatGPT, Gemini, Notebook.LM

Thank You!