Towards AI Literacy: 101+

Creative and Critical Practices, Perspectives and Purposes

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GenAI literacy 101: Don't believe the hype

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Most of us probably felt we had already consumed a lifetime's supply of technology hype even before we started hearing about GAI. Powered by OpenAI's ChatGPT, the new hype wave was so potent it demolished previously sturdy scepticism barriers across higher education and beyond. We 'learned' that if AI was currently quite fallible, it was soon-to-be infallible. It would be a step change in technology and society of an order of magnitude so much greater than anything we had seen before, that we couldn't even begin to understand how it might someday harm us, or how we should regulate it at this time. But also, it might become so intelligent that it will realise that humans should be eliminated for the greater good of - well, not humanity! It will certainly eliminate the need for human workers, except of course from the sorts of jobs many humans would actually quite like to be freed from.

And it seemed that education would be ground zero for all this exciting change. AI would write better assignments than students could themselves, so academics would need to employ AI-detecting AIs to catch them, and also marking-AIs to mark the remaining assignments that had gone undetected.

What forms of literacy are therefore needed by our colleagues and students? Styling themselves as seeing through the hype, the 'sensible people' of higher education have proposed that while these AI futures are hoped to be fiction, we must nonetheless engage meaningfully with AI, as it will inexorably become integrated into all that we do; learning and assessment activities should therefore make use of AI in order for students to become more familiar with generating and evaluating outputs.

This position appears to have cut through the hype clutter, but perhaps there is still more to unpack. The term 'artificial intelligence' itself recalls a core trope within science fiction that asks us to consider the existence of beings that can think for themselves, and therefore the dilemma of whether such entities are alive and entitled to human rights; a situation entirely unlike the large language models we are presented with today, which cannot actually 'think', 'learn', 'know' or 'hallucinate' although we are encouraged to imagine so. Also, as it has become impossible to raise interest (or funding) in new technology unless it is 'AI', the term is also being used to describe a much wider range of tools and services than just LLMs.

It suits Silicon Valley to pretend that there has been no history prior to the current shock of the new. But contrary to the idea that these technologies are unfathomable, they must be seen in the context of the intensifying datafication and automation that was always already in progress. AI, generally speaking, refers to applications which make use of data in order to automate tasks. Therefore, the work which has been done in the area of critical data literacy is of paramount importance to the development of AI literacy.

Critical AI literacy

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How do you define GenAI literacy? And, what can be done to foster the GenAI literacy of education professionals and students?,

Let's focus on critical AI literacy, with an emphasis on critical. As I said in Bali (2023), critical refers to questioning and skepticism about hyperbolic claims, and also refers to emphasizing social justice when critiquing GAI or any technology. We need to critique GAI's potential (see the AI Hype Wall of Shame), critique injustice or ethical issues in its processes or outputs, and critique its potential impact, while also being aware of the ways it can empower young people and professionals.

To have Critical AI Literacy in my view entails covering different dimensions as I have been presenting in multiple presentations. Figure 1 below includes all the dimensions, which I

describe in more detail underneath.

1. Understanding how it works. I usually use the QuickDraw game to explain how machine learning works. It uses pattern recognition, but the quick game helps explain the concept. One can also use metaphors (see Gupta et al, forthcoming) to explore different ways of understanding how it works, as well as misconceptions. It is useful to know the nuances of the differences between different models and types of GAI. You can also use free tutorials such as this one.

2. Having an awareness of the biases the models themselves perpetuate and the inequalities the platforms may exacerbate. Bias: Whose knowledge is dominant in AI models? Inequalities: are some people disadvantaged by insufficient access to these platforms or a lack of digital literacies to use them well? (See Safiya Noble's work, Joy Buolamwini's work).

3. Having an awareness of ethical issues. Aside from biases and inequalities, there is harm that has been and is caused in the process of creating some of these models, both in terms of harm to human labor (Kenyan workers, see Time magazine

article) and damage to the environment (climate, water). There is also potentially harm in terms of future employment, and issues of copyright violation - those whose content has been used to train AI models without their consent, and the kind of information GenAI produces without citing sources. (See Leon Furze's work; Ben Williamson's work).

4. Prompt Engineering. Know how to write prompts (sometimes in sequence) in order to get better quality results from GenAI. Many free courses and videos exist on this, and will be updated as platforms improve and new ones are developed.

5. When, why, where it helps to use it. This requires an awareness of the tendency to hallucinate (see the Hannigan et al.'s Botshit article & Shah and Bender's article on information access), and an awareness of one's own level of expertise to verify the quality and truthfulness of the output (Aleksandr Tiulkanov, 2023 in the UNESCO Quickstart document). It also requires an awareness of the kind of task that can be done well with AI, and the kind of task that requires special, nuanced human attention and care.

Relevant literature resources

101 Creative Ideas to Use AI in Education. https://zenodo.org/records/8072950

AI Pedagogy Project from Harvard Meta Lab. https://aipedagogy.org/

Bali, M. (2023, April 1). What I mean when I say critical AI literacy. Reflecting Allowed. [web log post]. https://blog.mahabali.me/educational-technology-2/what-i-mean-when-i-say-critical-ai-literacy/

Exploring AI Pedagogy. https://exploringaipedagogy.hcommons.org/

Gupta, A., Atef, Y., Mills, A., & Bali, M. (forthcoming). Assistant, parrot, or colonizing loudspeaker? ChatGPT metaphors for developing critical AI literacies. (accepted in Open Praxis. Preprint on Arxiv). https://arxiv.org/abs/2401.08711

Learn with AI Toolkit. https://umaine.edu/learnwithai

TextGenEd. https://wac.colostate.edu/repository/collections/textgened/

UNESCO (2023). ChatGPT and Artificial Intelligence in higher education. A quickstart guide. https://www.iesalc.unesco.org/wp-content/uploads/2023/04/ChatGPT-and-Artificial- Intelligence-in-higher-education-Quick-Start-guide_EN_FINAL.pdf