



PARTNERING WITH GENERATIVE AI TO WRITE

The case for research with AI as pedagogy

‘Staring into nothingness, forever, or...’

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Among much of the speculation around generative artificial intelligence (GenAI) are oft-repeated concerns about automation and the erosion of human agency, both for teachers and students (Bartoletti, 2022). This may be further extended to the research culture surrounding notions of plagiarism, as publishers use AI to detect authorship by AI. This is an antiquated publication system which relies on Humans-in-the-Loop (that is, any protocol which has human oversight) for peer review, but which itself is flawed. However, in this article I want to amplify ‘GenAI in research’ as a pedagogical innovation which emphasises the part of process over product in research.

GenAI has, of course, caused alarm about pedagogical practices such as assessment, but has also raised concerns about the purpose of education if machines can learn to mimic better the crude characteristics of intelligence they are trained upon. This algebra of imitation is perfectly captured by Treviranus (2022, p. 37): ‘If we can express the formula, we can teach the machines the formula. This not only benefits the advance of AI but also primes students to be replaced.’ While this overlooks complexities about the brain and consciousness that are not yet understood, it poses pedagogical challenges. It may be less a case of convincing students they can do better themselves than the chatbots and language models that they deploy (with their frequent ‘hallucinations’ – built-in mistakes in accuracy), and more an opportunity to use the disruption that AI represents to innovate.

David Deutsch has proposed that knowledge creation only arises from either the human brain or evolution (Hall, 2023). Thus, ‘research as pedagogy using GenAI

tools’ is a plausible response to an education system that has fallen back into transmission and regurgitation of knowledge modes (small wonder that GenAI can, then, duplicate and expose these shortcomings).

A prevalent issue from GenAI is how machine learning informs the predictive content upon which it is based. ‘Ultimately, what this translates into is that the patterns used to shape our future choices are based on historical data’ (Bartoletti, 2022, p. 82). Our behaviour is predicated on the past information the machine learning is built on, and large corporations such as OpenAI are running out of data to continually train and update the technology. This is problematic as it means more furtive data harvesting and churn predicated on existing texts, which is why platforms such as ChatGPT, Stack Overflow and new Windows features like Recall are intent on archiving content and preventing its deletion: in order to perpetually scrape, feed and resell.

Higher education, like other sectors, has become alert to the lucre of datafication, yet students have no automatic ‘opt out’ from walled gardens that institutions operate within. Nor are students often concerned about the privacy and surveillance implications accompanying systems that collect and analyse their contributions and the inferences drawn about these behaviours (Viberg et al., 2024). The University of Michigan was apparently involved in ‘licensing academic speech data and student papers’ to train language models (Coffey, 2024). This is part of an education system that uses language like ‘student malpractice’ and ‘academic integrity’, yet expects students to reiterate and repeat, then rewards their originality with numbers and letter grades.

Without new knowledge creation we endure a mundane reconstitution of the same, akin to the ‘infinite conversation’ between Slavoj Žižek and Werner Herzog¹ or the AI-generated *Seinfeld* episode ‘Nothing, Forever’,² from where this article drew its bleak dystopian proposition.

GenAI can support knowledge creation in research in the field of citizen science. Citizen science enables communities to create or interact with open-source data in collective projects (Jandrić et al., 2023). These have often involved generative tools, for instance in the case of machine learning identifying objects from photographs, such as taxonomies of plants or coral reef. Examples show where camera traps are leveraged within communities to track wildlife migration (Green et al., 2020); GenAI assisting in species identification (Van Horn et al., 2018); or natural language processing (NLP) mining social media to collect auroral observations (MacDonald et al., 2015).

Extending these cases to research as a process of learning in formal education elevates knowledge creation. Students access open data and work through given tasks to analyse with prompt engineering: filtering, sorting, categorising. Pedagogical approaches to mining large datasets are demonstrated by Wong and Li (2023), who designed NLP tools to create visualisations from volumes of literature, providing topic modelling for their students to identify themes and gaps in knowledge in datasets, resulting in ideation for student-led research. Seemingly, these methods result in the close co-creation of teacher and student that moves beyond the synthesis and explanation of existing literature to identifying new scopes for research. Crucially, this collaboration promotes teacher and student symbiosis, while allowing for ways of accessing GenAI to enhance and augment learning through research.

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Questions around human agency, mobility and creativity in an era of automation require imagination and innovation from researchers and educators in real time. As a reviewer who reads fairly up-to-date experiments and cases with technologies, it is obvious that innovation comes from researchers harnessing GenAI capacity to augment, rather than

treating AI as a problem to dodge in order to support outdated practices.

It is difficult to separate the prominence of data from technologically determinist endeavours to rewrite our ways of doing and being, and in some ways when we talk about AI, we are talking about ways that students understand data. It is important to harness this and realise its potential for teachers and students to utilise it as underpinning the research for learning process. Research does not, ultimately, need to result in a product that demonstrates impact; research is, fundamentally, a way of looking at and thinking about the world and, as such, is a vital part of the learning process.

¹ www.infiniteconversation.com

² <https://www.youtube.com/watch?v=M6mD9YzVbZl>

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