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Collaborative sensemaking with generative AI: A muse, amuse, muse

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Educators are wrestling with the changes wrought by generative AI (GenAI), particularly the widespread adoption of ChatGPT. This paper introduces creative and collaborative sensemaking with GenAI as an alternative form of academic and professional development to spark reflection on the implications of this technology for educators and to increase GenAI literacy. By combining human and AI-generated text in iterative loops, we created a text and a creative process to collectively investigate the use of GenAI in education. Collaborative poetic inquiry, an arts-based research method, was used in tandem with generative experiments using AI tools, culminating in an ode to collaborative sensemaking. Drawing on the authors' collective experience as a group of educational professionals and academics, we then critically analysed how GenAI may impact educators and augment creative practices to generate new insights. Further implications for practice from this sensemaking with GenAI in education are discussed.

Keywords: GenAI, artificial intelligence, collaborative poetic inquiry, educational development

Introduction and context

The higher education and vocational sectors are grappling with how generative AI (GenAI) might best be used for learning while research and practice are still emerging (Bearman & Ajjawi, 2023). Collectively and creatively responding to GenAI was an important impetus for this research, which aimed to move beyond a simple understanding of the tools and the mechanics of prompt engineering to investigate and make sense of the potential impacts of GenAI on academic development and on the academic practices that developers support.

This research was conducted by a group of educational professionals and academics from four different tertiary education providers across Australia (Melbourne, Canberra, Sydney and Alice Springs). We initially met at an interactive blackout poetry workshop (Vallis & Taleo, 2022), and were then invited by these two researchers to explore and co-research GenAI through poetic inquiry.

Methodology

To gain insights into the potential uses and implications of GenAI, we needed a research method that would enable participants to create and collaborate in novel sensemaking. Collaborative poetic inquiry was an apt choice because, as well as enabling participants to find and share text strings, it centres participants' lived experiences, encouraging critical reflection and changes in practice (Lincoln et al., 2017). Strongly linked with the literary tradition of 'found poetry' (Prendergast, 2009, p. 541), collaborative poetic inquiry can use poetry in different ways across research phases (Fernández-Giménez et al., 2019). Researchers might transform interview data into poetry, or write with informants, or create a poem about the research process (see 'Ode to collective sensemaking', below). Education often involves ill-defined, ambiguous situations and creative problems, which Mumford et al. (2012) characterise as complex and resisting neat solutions. Adding technology further blurs physical and digital boundaries, and adding non-human agents again complicates the process. In this ambiguous space, creative and collaborative inquiry offers alternatives to more traditional programs for staff academic and professional development in educational technologies (Taleo & Vallis, 2022). Creative inquiry is a fitting method for the unpredictable, real-world practice of educational development.

Creative sensemaking

One method of conducting collaborative poetic inquiry is collaborative writing and reflection using blackout or erasure poetry, which may be used to challenge the meaning of traditional texts (Jawaheer, 2022). As a collaborative exercise, creating blackout poems requires negotiation and compromise and developing working

relationships with others. Erasure or blackout poetry stimulates ideas through play with words and language, provoking reflective thinking as a group. Through the erasure of text and critical thinking, we create new meaning. In this inquiry, a text generated with AI was to provide the starting point, and the group agreed on an initial prompt for ChatGPT. Participants then refined the prompt to generate their own texts to feed into an AI blackout poetry generator. We multiplied the diversity of voices and 'polyvocality' (Pithouse-Morgan et al., 2014) in this collaborative poetic inquiry by combining our words with those of the unacknowledged authors found in the large language model (LLM) that ChatGPT uses. Working with the outputs of artificial intelligence without knowing the inner workings of the algorithms in this 'black box' (Bearman & Ajjawi, 2023) was at times uncomfortable. Educators are often positioned as experts and are not used to this 'un-knowing and not-knowing' (Pithouse-Morgan et al., 2014, p. 167).

The collaborative poetic inquiry process is described in Table 1 below. Through this process and discussion, we honed our research focus to the question: 'How can collaborative poetic inquiry help us understand the utility of GenAI in tertiary education?'

Table 1: Step-by-step process of the collaborative inquiry

Step	Purpose	Reflection	Leading question	Tool(s)
1. Create a prompt	Start from the same prompt.	Comment and vote to choose a prompt.	How to word our question of interest?	Shared document
2. Post into ChatGPT	Generate and regenerate text from the common prompt.	Collect the responses and prompts. Discuss synchronously.	What if we used the results in a poem generator?	ChatGPT Shared document
3. Use blackout poem generator	Make sense of the question in a creative way.	Share blackout poems. Discuss synchronously.	How to articulate this experience differently?	Blackout poetry generator Online whiteboard
4. Use image generator	Generate images as sensemaking	Share reflections and images.	How to view it from another perspective?	Image generators Shared document
5. Erase text by hand.	Condense ideas from reflections.	Group members select keywords, erase others on allocated slides.	How to create a single creative output from everyone?	Shared slides
6. Create a collective poem	Synthesise experience into a single poem.	Perform the poem. Discuss and reflect on our understanding.	What form of poetry suits this text? What resonates?	Shared document

Figure 1 below represents an overview of our process flow. Each step is shown as a small loop where AI was used to generate input and output. A series of collaborative reflective sessions were held to advance the sensemaking. The creative responses, reflections and questions from each team member prompted next steps.
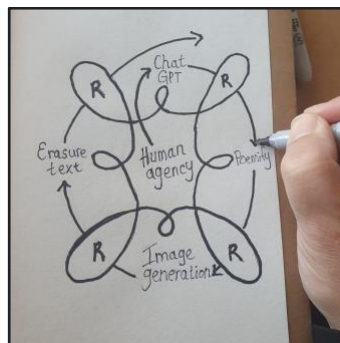
**Figure 1: Process showing human agency with tools and reflection (R) loops
(Drawing and photo credit: W. Taleo)**

The human reflection loops are larger and more important in this process than the prompt engineering. In our research, play with GenAI revealed complex cognitive and emotional responses in our individual reflections. These are alluded to in our 'Ode to collaborative sensemaking', created from the final reflective loop. See Figure 2.

Part I Erratic muse

We chat, b chat, 3, Be this, this, Be my, my. [*machine stuttering*]

Part II – Alone

It is too staged
Where is my choice of words?
Who generates my thoughts?
What noises are these?

Predictable paths
Generic, evasive, rehearsed
My chat with AI
Lifeless machine responds.

I'm alone, struggling
Reaching, connecting
Attempting new skills
To surf mega waves.

Consumed by dystopia
Patterns, premonitions,
Fears appear – I let go
Of AI's black gaps.

Collaboration is paradoxical
Exciting yet uncertain
Curiosity follows frustration
Is the human a reimagining?

Part III – Trust

The machine reaches its limits
My independent revision begins.
What am I after? My words are
dream conversations.
  (*Convinced*: maybe the problem
                is me)

No idea what just happened
New more-human dimension
It seems to know
I'm slightly concerned.
    (*Enticed*: generate something
                more-than-me)

Venturing off track
New trains of thought
I keep coming back
Searching for insights.
        (*Think*: obey those rules)

What stands in our way
Of provocations, and poetry
Fragile, remote and distant
Trusting is a human way.

  (*Collaborate*: challenged by
              distance and technology

Part IV – Meaning

Amongst grey lines, messy design
Evolved, complex
Tail chasing, games of chance
Highlight by inversion, shake the dice.

Human interpretation weaving
Loops with text, art and AI
What is a masterpiece worth?
We decide its meaning.

Visible frustration
Arms stretch across the page
We play with the hidden
A sensemaking team

Imperfect perfection leaves
only humans to breathe.

Figure 2: Ode to collaborative sensemaking

Critical commentary

In Part I of the ode, 'Erratic muse', we allude to the jarring effect of algorithms that seem convincing and human-like, where the connections between ideas are not consistently logical (Gašević et al., 2023). It is banal chatter. Many of us experienced ChatGPT as an erratic muse that repeats text, a machine that may stutter nonsense. On the other hand, its text strings sometimes inspired us. Most of the group found the images generated from text to be thought-provoking and leading to further ideas for future research and activities.

Frustration is the theme of Part II, 'Alone'. GenAI tools, for all their hype, seem blunt, generic and not yet capable of crafting interesting texts. While recent studies indicate that LLM-driven tools such as ChatGPT are becoming more sophisticated in writing tasks, even passing some assessments (Li et al., 2023), at the time of writing (June 2023) the possibilities of genuine human and AI collaboration seem overstated. As a group, we felt GenAI was 'exciting yet uncertain': most of our learning arose from human collaboration and individual reflection, through a messy patchwork of communication via email, videoconferencing, online documents, and online whiteboard and noticeboard tools, to which GenAI was another layer. Our experience highlighted that learning is human - learning is not online or in algorithms: rather it occurs in bodies in physical spaces. Despite the constraints, we were curious and willing to push the process further, perhaps because, as Selwyn notes, as educators we feel responsible 'to suggest alternate ways that this AI might be useful' (Selwyn & Jandrić, 2020).

Part III of the ode, 'Trust', brought us to these questions: Could GenAI be trusted? How could we evaluate its

outputs? When GenAI generates human-like language, it becomes harder to discern where technology begins and ends, to locate this 'intersection between AI and humans' (Gašević et al., 2023, 2). As a group we played with and generated content between ourselves and AI systems, back and forth in an iterative way, which provoked many questions around human agency and authorship, and the role of technology in creative processes. We underestimated the important role of emotions in sensemaking and play. Our mix of fascination and concern, as the texts and images generated by AI became more human-like, was understandable, predictable even. The slippage between the limits of the machine and our own words was nevertheless unsettling. There were moments where we lost confidence in our 'Dream conversations', questioning our own creativity: 'maybe the problem is me'. The human–machine experience formed a stark contrast to our human–human collaboration. Technology itself is 'fragile, remote, distant', whereas our collaboration in this research, despite being entirely remote, was warm and supportive. Collaborators had varying degrees of experience in this creative work, but all made whole-hearted attempts, with many questions, discussions, and misunderstandings (set right) along the way.

In Part IV, 'Meaning' we saw that grey lines and messy design are core to educational development, to work life and to the creative process. The discomfort of chaos and complexity incites curiosity and growth. 'Tail chasing' represents our experiments and failures. The large language models that GenAI tools use are trained on masses of data to learn and predict, to estimate the probability distributions and generate text that is likely. Is it a game? It seems we shake the dice, in both predictable and unpredictable ways, with AI and generative text.

Our sentiments echo wider concerns about the future of education, particularly around how we might increase AI literacy for ourselves, colleagues and students (Gašević et al., 2023). In our provocation to 'highlight by inversion', we identify a need to invert what is expected in educational development and to take risks. The value of text and art is determined by the subjective judgments and interpretations of humans even if the creative process can be challenging and frustrating. Arms stretching across the page, we reach to understand. Playing with the hidden, not knowing, these are skills that educators and students alike need.

Implications for practice

GenAI may become part of the workflow of educational design and development. Articulating roles for ChatGPT and artificial intelligence as outlined, for example, in the UNESCO guidelines (Sabzalieva & Valentini, 2023), may prove a productive way to experiment with different aspects of GenAI in an accessible way. In our process, GenAI served as a 'possibility engine', as an aide to generate and regenerate ideas that were then evaluated, modified and redefined, or discarded altogether; and we saw value in using ChatGPT as a 'collaboration coach' to facilitate our collaborative research, problem-finding and problem-solving. We argue that Sabzalieva and Valentini's 2023 list will grow as educators become more adept and at ease with the technology: for example, we would add 'patient research assistant' to the list as a role that ChatGPT filled as we conducted this collaborative inquiry. This shift to working with GenAI also has implications for current educational roles, and new roles may emerge in response (Bozkurt & Sharma, 2023). Instead of striving to be experts in all forms of technology, educators and practitioners could take a more exploratory approach, learning alongside collaborators, like us, from outside traditional AI communities of tech experts.

The creative process and reflection on its outputs helped us develop a critical gaze on GenAI and prepares us for more uncertain times ahead. As a group we were able to experiment within a safe space before involving students or colleagues. This experimentation is critical, as McCarthy and Hansen (2022) note, because in order to 'creatively navigate complex practice, we must deeply understand what it means to engage in the uncanny'. The project has also provided examples of creative GenAI activities which we can extend and share with our educator colleagues and collaborators. In this way, we are able to engage with GenAI with a different frame, rather than limiting its application to instrumental uses for productivity gains, or focussing on how to avoid academic integrity issues.

Finally, we argue that educators need to investigate, discuss, and respond to the seismic changes occurring in education collectively and creatively. Having colleagues beside you strengthens your position. In order to benefit from the potential of generative AI, humans must be at the heart of education. Collaborative poetic inquiry helps us to imagine GenAI in our educational practice as a muse, to amuse, and to muse.

Acknowledgements

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