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Creative partnerships with generative AI. Possibilities for education and beyond

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ABSTRACT

The impact of generative artificial intelligence (AI) on creative production in industry and education is just beginning to be experienced and understood. This impact is likely to accelerate and become even more significant as the computational potential of generative AI grows through training on more diverse and more extensive language models and data sets. Emerging research in this new field suggests that previous models of understanding the interactions between machine and human may no longer be sufficient in a world of generative AI. The significant question is how emerging generative AI technologies will relate to and be a part of human creativity and creative outputs. In this article, we adopt a posthuman stance and conceive of creative output involving generative AI and humans in terms of a yet-to-be-fully-realised and emergent relationship that will likely become more integrated and complex. To investigate and experiment with this relational notion, each of us (as part of an autoethnographic approach) developed a creative output using ChatGPT: a poem and a multimodal narrative. We then employed the idea of alterity relations from the American philosopher of technology, Don Ihde, to conceive of the possibilities and limitations in working relationally and productively with generative AI. As two academics working in teacher education, we applied our learning from this exploration to possibilities in educational contexts. In this article, we offer several important implications and provocations for practitioners, researchers, educators and policymakers, not only in terms of practical concerns but also for rethinking the nature of the creative output.

1. Introduction

Generative AI (such as OpenAI's ChatGPT), with its capacity to create and produce content autonomously, is likely to have a significant impact on education and offers both possibilities, limitations, and dangers (W.M. Lim et al., 2023; Luckin et al., 2016). It can transform the learning process and offer new ways of producing content and interacting with learners. Teachers can work with generative AI to create curriculum content, generate new ideas, research, build resources and produce lessons that are adaptive to students' learning needs. More broadly, creatives in industry have a new facility for creative output, including poetry, artmaking, video production, journalistic copy and animation, to name but a few possibilities (De Cremer et al., 2023). Professional writers can use generative AI as a writing and research partner to generate ideas, write sections of text and do menial jobs that potentially free the writer to be more productive and focused on the quality of the ideas.

However, alongside the potential benefits come the dangers of over-reliance on generative AI across all spheres of human activity

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and creative production, including education (Quay-de la Vallee, 2023). This may impact work, employment and the sorts of careers that are possible in the future. In education, this over-reliance on AI might mean that students are less involved in essential aspects of human interaction and group work, thus impeding the expected creative and emotional development. Moreover, there is the risk of perpetuating biases present in training data, which might lead to subtle forms of discrimination, suggesting the need for a critical lens on the use of AI (Zhou et al., 2024). Finding a balance between using generative AI as a valuable aid and sustaining humanity in education is essential.

AI has sometimes been deployed as a pattern recognition, prediction, and data analysis tool. With the emergence of generative AI (GAI), it is being re-conceived in terms of the human-machine dynamics of creativity and creative production. This shift demands a revaluation of anthropocentrism from a posthuman perspective, suggesting a fundamental rethink of human-machine relations (Banks & de Graaf, 2020). Rather than viewing GAI and AI-based applications as mere extensions of human capability (as tools), we consider them active partners capable of generating novel, unexpected outputs that challenge conventional notions of creativity and the sources of ideas. Of course, this view is contentious, and we fully acknowledge that there are a range of views about the capacity of AI to be creative in the literature (Ivcevic & Grandinetti, 2024). This potential paradigm shift implies the need for a cross-disciplinary and cross-sector approach, especially in education. The interlacing of art, science, technology, and philosophy is necessary to understand and employ generative AI's full potential.

Our study embodies a collaborative autoethnography by presenting two pieces of personal creative output (a poem and a multi-modal story) produced in concert with generative AI. The aim is to highlight the potential relationship between humans and AI while also adopting a critical perspective and exploring its possibilities and limitations, especially in relation to education.

2. Literature review

Artificial Intelligence (AI) has revolutionised various industries, including the creative sector, by enabling generative AI systems (GAI) that produce creative outputs (Aydin & Karaarslan, 2023). The relationship between generative AI, creativity, and education has become a prominent subject of research in recent years (UNESCO, 2019). This literature review aims to provide an overview of generative AI, creativity, and creative output, with attention to definitions and background.

2.1. Definitions and background

GAI refers to a subset of AI technologies that aim to produce outputs that simulate human creativity. These systems operate on large datasets, learn patterns, and generate content autonomously. They use machine learning algorithms, such as recurrent neural networks (RNNs) and transformers, to generate text, images, music, and other forms of creative content. ChatGPT is a popular example of a generative pre-trained transformer.

Creativity is a multifaceted concept that involves the generation of novel, valuable, and relevant ideas, or artifacts (Runco & Jaeger, 2012), as well as the processes and human contexts from which this output emerges (Creely et al., 2021). In other words, we build creative capacity with each other in culture, through which culture then evolves (Gaboria, 2019). This is reiterated in Glăveanu's (2013, 2020) 5A ecological framework which conceptualises actor, action, artifact, audience, and affordances as critical elements shaping creativity within social, technological, and material contexts.

GAI, as a creative technology, seeks to replicate this human capacity by generating original and innovative content. The algorithms are trained on vast datasets to learn patterns and create new, imaginative outputs. A significant point is that GAI simulates human speech patterns from existing linguistic resources but is not human (Baidoo-Anu & Owusu Ansah, 2023). It has no stable worldview, sense of a self, emotion or belief system. At the same time, with generative AI, this output can be autonomously generated without direct human intervention, leading to opportunities and challenges in the creative industries, and in education at all levels. Generative AI has been a paradigm shift in the realm of creativity, challenging traditional notions that creativity is an exclusively human process and output, and perhaps pointing also to the creativities of non-human species. This technology, through its ability to generate novel and meaningful content, has blurred the lines between human and machine creativity (Boden, 2019). For instance, AI systems have been used to create original pieces of art, music, and even literature, demonstrating a capacity for creativity that was once thought to be uniquely human (McCosker & Wilken, 2020). Generative AI also has the potential to build on human creativity, not replace it, by providing new tools and methods for creative expression. It can generate a multitude of ideas in a short time, thus aiding in brainstorming and idea generation processes (Elgammal et al., 2017).

2.2. AI in creative industries

The advent of generative AI has already begun to reshape the world, especially in creative industries such as writing, image generation, animation and special effects (SFX). One significant impact area is the use of AI-generated content in areas traditionally produced by human creatives, which can disrupt traditional creative production methods. In Hollywood and the entertainment sector, actors and workers are increasingly concerned about the implications of AI's wider adoption (Newitz, 2023). AI-powered writing algorithms can churn out scripts and content rapidly, challenging the traditional roles of human writers and potentially reducing job opportunities in the creative workforce.

Additionally, AI-driven SFX technology is becoming more sophisticated, allowing for realistic and cost-effective visual effects, which may alter the dynamics of film production and impact the demand for certain skilled labour (Hermann, 2023). As AI advances, industry stakeholders must address the concerns of actors and workers while embracing the potential benefits of AI-driven creativity.

([Liu & Zheng, 2022](#)). Striking a balance between human creativity and AI's capabilities will be crucial in shaping the future of creative production in Hollywood and across creative industries.

2.3. AI and education

Integrating AI in education has opened new possibilities for personalised learning, intelligent tutoring systems, assisting teachers' workloads, creative output, and content generation. AI-driven educational models leverage data analytics to understand students' learning patterns, adapt content to individual needs, and assess progress effectively ([Holmes & Tuomi, 2022](#)). AI-driven applications based on LLMs, promise personalised learning experiences by generating adaptive content tailored to individual student requirements ([Siemens & Gašević, 2012](#)). These technologies also facilitate interactive simulations that can aid comprehension of complex subjects like science and mathematics ([San Chee & Hooi, 2023](#)). Furthermore, AI-based grading systems streamline assessment processes, optimising educators' time and resources ([Chhatwal et al., 2023](#)).

However, there are concerns surrounding the reliance on AI-generated educational content. Critics argue that excessive use of AI may lead to an overly standardised educational experience, potentially stifling creativity, and critical thinking skills ([Zaglas, 2019](#)). Ethical considerations must be carefully addressed, including data privacy and algorithmic bias ([Williamson et al., 2020](#)). Moreover, there is apprehension that an overemphasis on AI could diminish the role of educators, resulting in reduced human interaction within the learning journey.

2.4. Critical views of AI and generative AI

Generative AI, such as ChatGPT, has the potential to impact education significantly, presenting both opportunities and challenges. It holds promise in advancing education through personalised learning and innovative content creation to support the work of both students and teachers. Striking a harmonious balance between AI integration and human guidance is imperative to harness technology's benefits while upholding the core values of education ([Senechal et al., 2023](#)). The question remains how best to utilise, work or partner with generative AI. Generative AI potentially can foster collaborative creativity by augmenting and extending human capabilities in novel ways, exemplified by co-creation and organic collaborations ([Rafner et al., 2023; Vincent et al., 2023](#)). But this integration will need to respect ethical boundaries while still enhancing creative productivity through human-AI integrations.

Despite its potential benefits, AI, especially generative AI, faces criticism and scrutiny as it comes into creative intersection with all areas of society. Several critical views have emerged concerning the implications of AI in education and the creative domain [Wach et al. \(2023\)](#); [W.M. Lim et al. \(2023\)](#). Generative AI's ability to create convincing fake content, such as deep fake videos and audio, raises concerns about misinformation and even fraud. Misleading educational content could lead to distorted perceptions of truth and hamper the pursuit of a factual and testable basis to knowledge ([W.M. Lim et al., 2023](#)).

Another potential issue is intellectual theft and appropriation. The proliferation of AI-generated content without proper attribution may lead to the misrepresentation of creative work. Plagiarism and intellectual property concerns arise as AI-generated outputs blur the lines between original and derivative work. Within education, this can lead to concerns about the authenticity of creative production as part of fulfilling outcomes. In addition, AI algorithms are often trained on biased or culturally skewed datasets, which can lead to homogeneity in creative output and cultural biases, and this, in turn can perpetuate stereotypes and limit diversity in educational content and creative expression ([Wach et al., 2023](#)).

In sum, it is becoming clear that generative AI can potentially disrupt and transform creative industries, media production and education, offering novel opportunities and greater efficiency in output. Critical views emphasise the risks of deep fakes, 'hallucinations', misrepresentations, and homogeneity in creative work and educational content ([Mai et al., 2023](#)).

3. Conceptual perspective: alterity

This article examines and conceptualises the possibilities for a creative partnership between generative AI and humans and the sort of hybrid forms that might emerge in this intersection. To understand the nature of this partnership or relationship we needed a concept that embodies what it means to be in a productive affiliation. The concept we came to is alterity.

The concept of alterity is about appreciating and recognising otherness in terms of the differences between and distinctiveness of each being, in relational, social, and cultural contexts ([Bauman, 1993; Todorov, 1984](#)). This philosophical idea has been explored by many theorists across a range of disciplines, including ethics and studies in technology ([Hazell, 2009](#)). Philosophers such as Martin Buber ([1970](#)), Emmanuel Levinas ([1969](#)), and more recently Don Ihde ([1990, 1993, 2002](#)) have contributed to an understanding of the notion of alterity in the context of technology-human relations. Additionally, the emerging importance of posthumanism has brought attention to the agency of technology and problematised the idea of alterity as being essentially human ([Braidotti, 2013; Ferrando, 2019](#)). Most especially, it has shed light on the complexities of human-technology relations and the dynamics of otherness between human and non-human entities, including animals and the environment.

Emmanuel Levinas developed a fundamental understanding of alterity within relational ethics. For Levinas, alterity is not just about acknowledging the existence of others but also recognising their independent status apart from reliance on another ([1969](#)). In his ethical, relational philosophy, encountering the other disrupts the desire to control and categorise another being. It thus demands an ethical response that goes beyond self-interest towards seeking the authentic equality of the other.

Levinas's idea of ethical alterity prioritises the other, leading to an ethical duty to respond to the vulnerability and suffering of the other but also be open to what can be learned in mutual and respectful relational encounters that opens the possibility for dialogue.

This ethical obligation to the other forms the basis of his philosophy and redefines the relationship between the self and the other in a way that fosters compassion and empathy. Of course, Levinas' idea of alterity is altogether anthropocentric: viewing the alterity relation in purely human terms not involving non-human entities and nature.

Posthumanism, on the other hand, is a conceptual understanding of humans in the world that challenges conventional notions of human exceptionalism and explores agency and core values in both human and non-human terms, including an emphasis on ecology and the environment (Barad, 2003, 2007; Braidotti, 2013). It also suggests the idea of alterity as a potential relational space for creativity that becomes actual when entities enter a relational engagement. Regarding technology, there is an acknowledgement of the transformative impact of technology on human existence. From a posthumanist perspective, humans may no longer be considered separate and have full hegemonic control over technology; rather, humans are repositioned in interconnection and relationship with technology (Ihde, 1990). This paradigm shift brings emphasis to the agency of technology and its active role in shaping human experiences and the world at large.

Moreover, posthumanism interrogates the longstanding boundaries between humans and machines, blurring the lines between organic, carbon-based creatures and the artificial (Clark, 2003; Pepperell, 2003). This shift in outlook challenges notions of alterity (as espoused by Levinas and others), built on the imperative of the uniqueness and distinctness of human beings. Technology integration into human society has arguably altered human perception of self and others, leading to new forms of hybrid identity and interconnectedness.

This shift in terms of conceiving alterity as encompassing both human and non-human entities is reflected in the writing of Don Ihde, an American philosopher of technology. He has explored the notion of alterity, specifically within the field of the philosophy of technology. Ihde asserts that technologies have a form of alterity relations by introducing novel ways of perceiving and experiencing the world in contrast to humans (Ihde, 1990). According to Ihde, humans encounter a technological other that influences their perceptions, thoughts, and actions when engaging with technologies. Ihde argues that human-technology relations are reciprocal and dynamic, such that who is in control is in dispute. Technologies enlarge constructions of the human self, altering subjectivities and affording new vistas for existence and creative action.

Though not currently existing, it is probable that in the future that AI machines will act independently and have authentic existence apart from humans, displaying Artificial General Intelligence (AGI). Even now, it could be argued that AGI displays some or partial autonomy in the way it creates and acts through the unknowable 'black box' at the centre of current generative AI models (Yampolskiy, 2024). However, this existence may not be anthropomorphised or contain an internalised autonomous self (Gabora & Bach, 2023), and it is important to consider that AGI may not follow the same path towards self-referential agency as seen in animal species, such as chimpanzees and corvids (and often demonstrated through the creative use of tools) (Bird & Emery, 2009). This being the case, the nature of alterity relations may shift to a new sense of otherness that is neither human, nor posthuman. There is perhaps a case to be made that alterity with AGI may not correlate with humanised or anthropomorphised autonomy but may instead emerge as a new type of otherness, capable of creativity in its own way.

This form of otherness could embody some aspects of posthumanism while leading to a distinct manifestation of agency that is different from humans and other animals. As AGI evolves, it might exhibit forms of agency that do not rely on self-referentiality or creative intelligence in the way that animals do. The future may see the development of a new set of alterity relations, recognising this emergent, non-human form of agency.

The concept of alterity discussed from the perspectives of Levinas, posthumanism, and Don Ihde's notion of human-technology alterity relations suggests the complex and evolving nature of all the relationships that connect to human existence, particularly the technological in an increasingly digitised world that now includes the strong emergence of AI. Levinas emphasises the ethical imperative of acknowledging and responding to the differences of the other, while posthumanism challenges human exceptionalism and explores the transformative agency of technology. Don Ihde's insights add to this philosophical discourse by recognising that technology becomes other in an alterity relationship with humans. With the development of AGI, however, Idhe's conception of alterity may require further expansion for understanding human-technology relations, one that accommodates new kinds of alterity relations which move beyond current human-centred concepts of control, autonomy, and agency to non-anthropomorphic, non-sentient forms of agency and interaction.

4. Methodology

This study employs a collaborative autoethnographic inquiry approach to explore the intersection of creativity and computer-generated output using GAI (Chang et al., 2016). The research is framed as an exploration of the possibilities and potential applications of creativity through GAI, with a focus on understanding the role of GAI in the creative process. Instead of a specific research question, our inquiry seeks to engage in a speculative investigation of the emergent space of computer-generated artistic content and its impact on creativity and education.

4.1. Data generation

This study generates two main types of data: AI-generated content and individually created responses to the AI-generated output. Firstly, we utilised GAI to produce prompts and creative content. These AI-generated prompts catalysed our creative processes, enabling us to co-create unique artistic expressions. Secondly, each participant produced individual responses to the AI-generated content, reflecting on their creative choices, interactions with the AI, and their perceptions of how the AI influenced their creative outputs. This dual data generation process captures the raw AI-generated material and the human responses and reflections it elicited.

4.2. Collaborative autoethnographic inquiry

The collaborative autoethnographic inquiry methodology emphasises individual introspection and collective reflection and dialogue (Chang, 2013). We engaged in creative processes using AI-generated prompts and produced artistic works. Following this creative phase, we shared our creative outputs and reflections and participated in dialogue. The exchange of creative works and reflective narratives facilitated an exploration of personal experiences and collaborative insights about working with GAI.

4.3. Thematic analysis

Initially, the creative works and subsequent reflections were independently analysed by each author. Collaborative discussions were then conducted to refine and validate the identified themes. The thematic analysis focused on exploring the nuanced interplay between human creativity and AI-generated elements, informed by the notion of alterity and the concept of a creative space where entities come together to form a new whole (Todorov, 1984; Braidotti, 2013; Whitehead, 1929).

A deductive analysis followed, constructed with a clear framework of analysis centering on key philosophical concepts (below) that emphasise the dynamic interactions between humans, entities and their environments.

Relation: This theme emerged directly from the application of Ihde's (2002) exploration of how entities relate within the context of alterity. As we analysed each other's reflections, we specifically looked for expressions and instances where the nature of relationships between humans and AI was discussed.

Hybridity: Braidotti's (2013) discussions on hybrid identities and forms provided a theoretical backdrop for identifying instances where merging or evolving identities and new creative forms were intertwined with AI.

Agential Realism: Barad's (2003) concept of agential realism was employed to identify and categorise data points where agency was attributed to both humans and AI, and AI became an active participant in the creative process, capable of influencing and altering the creative outcome.

Shifting Positionalities: Drawing again on Ihde (2002), this theme was shaped by a focus on the positionalities of human and AI agents. Data highlighting the mutable and dynamic stances the authors took in response to AI interactions were categorised under this theme, bringing attention to the fluid nature of creative roles and perspectives.

Ethno-onto-epistemological Understandings: This concept arose from a synthesis of the philosophical work of Barad (2003) on the interconnectedness of being, knowing, and ethical action within the context of interacting with AI.

Each piece of qualitative data was scrutinised utilising these theoretical underpinnings, allowing us to categorise and understand the complex dynamics at play. This structured, theory-driven approach ensured that our analysis was not only comprehensive but deeply rooted in philosophical inquiry, leading to a robust understanding of the nuanced interplay between human creativity and AI-generated elements. We applied the same structured deductive coding system, informed by concepts of alterity, hybridity, and agential realism, to our AI-assisted creative outputs. However, our analysis in the findings section below, while covering the above categories, was written in a more integrated and organic fashion.

Through collaborative autoethnographic inquiry, this study aimed to provide insights into the potential creative roles of generative AI with humans. The methodology of combining AI-generated prompts with individual creative responses and reflections facilitated an in-depth exploration of the impact of AI on the creative process and created the ground for an emergent discourse on the intersection of creativity and AI-generated content, providing a speculative, yet insightful, exploration of this evolving landscape.

5. Findings

In this section, we present the findings of our collaborative autoethnographic inquiry. The findings are divided into two sections built around the two creative works. Each section contains the work itself, a personal reflection by the author and then an analysis of both by the other author.

5.1. Creative work 1 – a multimodal narrative

Appendix 1 presents the prompt used in ChatGPT to inform this first creative work. The prompt was purposefully short and focused on using the GAI to develop a useful, relevant character and backstory that would enable the author to construct a narrative text. Also in Appendix 1, the creative work itself is presented. This piece was created entirely by the human author, drawing on the character background and narrative details created by the GAI. The creative work became a storyboard that framed the developing narrative. In addition, images to reflect each stage in the narrative storyboard were generated in a generative AI image creator (<https://hotpot.ai/art-generator>). These images provided a way to visualise the story without relying on fine art skills.

5.2. Personal reflection

The genesis of this piece can be traced back to a stimulating dialogue I had with a group of primary school educators. They were eager to integrate artificial intelligence into their curriculum, not merely as a theoretical concept but as a tangible, relatable entity for their young students. They believed that with the right guidance, AI could be made more accessible and engaging. The overarching idea was to generate a fictional character, using AI, that could helm a story designed to demystify this intricate technology for children.

To kick-start the process, I posed a broad, open-ended prompt to the AI software. By keeping the instruction minimalistic, I intended

to give the AI an expansive canvas to conjure a character, letting its algorithms roam free without undue constraint. What emerged from this was genuinely enlightening, prompting me to reassess my initial direction.

While my original inclination had been to root the narrative in a familiar setting - perhaps a modern classroom or a buzzing office where the presence of AI is already a norm - the character blueprint from the AI swayed my thoughts towards the great outdoors. I visualised a vibrant tale of exploration, with the protagonist encountering an affable AI-powered robot, paving the way for myriad adventures. The serendipity of this direction was that it allowed for a richer tapestry of events, interwoven with diverse AI elements and dynamic interactions, making the story more relatable and captivating.

The AI's contribution wasn't limited to just a setting change. It seemed to breathe life into characters that I hadn't initially conceptualised. For instance, the inclusion of Lily's parents as scientists rooted in the world of AI research added depth and authenticity to the narrative. The whimsical addition of a cat, which became the catalyst for Lily's initial adventure, was another welcome addition by the AI. These characters, from the AI's algorithms, not only bolstered the story's continuity but also provided Lily, the protagonist, with meaningful connections and a driving force behind her actions.

Reflecting upon the entire process, it became evident that integrating AI into the storytelling process not only enriched the narrative but also underscored the very premise of the piece: showcasing the potential of AI as a creative partner in education and in creative industries beyond education.

5.3. Analysis

Two texts have been produced because of a single interaction with generative AI. The first is a multimodal text that reflects the original prompt, the narrative offerings from AI (visual images and words) and the creative composition and sequencing from the human. The second is a reflection on the process of working and developing ideas and content in concert with the AI, which reveals the agency of both the AI and the human in the composition. Therefore, recognition of the distinct otherness of the AI (its alterity) is clear in both texts, with identifiable original material offered by the AI, including the creation of a story background and character information and developing narrative cohesion. The alterity in this interaction is evident when the AI mimics an interaction with a human in what appears to be a pseudo 'other' person in the creative relationship, suggesting the hybridity of the creative doing (Fabri et al., 2023).

Both texts provide an intriguing insight into the relationship between a human author and a generative AI partner (Peeters et al., 2021). The author's interaction with the AI was not just as a tool (which would position it as merely instrumental, objectifying it) but as a partner in the creative process and the production of the multimodal story. On one hand, the AI might be viewed as an instrument because of the definite limitations of what it can do and because it is subject to the parameters set by the human user. On the other hand, the AI's contribution of new, unexpected characters and plot trajectories suggests that it became an autonomous contributor, even with what might be viewed as a simple, rudimentary interaction. There was evident mutability between what the human and the machine produced. In this context, "mutability" refers to the ability of the roles and contributions of both the human author and the generative AI to change and evolve during the creative process and produce new hybrid forms. The term highlights the fluidity and interchangeability between what the human and AI produce. This evokes the question of authorship and thus the ethical ground of this emergent relationship (Yeo-Teh & Tang, 2023). It is interesting to speculate what might happen if the prompt engineering was taken further in multiple iterations.

The alternation of functionality between treating the AI as a mere tool and recognising it as a potential co-creator encapsulates the central tension of this alterity relation: the interplay between what is familiar in human collaborative or distributed creativity and the estrangement felt in this collaboration with a machine. Moreover, while informed by human prompts, the AI's output emerges as something distinct and external to the author's own cognitive and creative processes—which surprised the human author. The author recognises this by noting the AI's output as emanating from what seems like a distinct 'other'. Such a perception, where the AI becomes a new type of 'other', an agential entity in the creative process, brings attention to human-machine alterity as an emerging posthuman concern (Hitsuwar et al., 2023). Considering how this relationship might evolve, especially as AI grows in complexity and capability is intriguing. Will the 'otherness' diminish, or will it enlarge and deepen?

5.4. Creative work 2 (a set of two poems)

[Appendix 2](#) contains the prompt used in ChatGPT to construct a second creative work. The prompt was highly focused on a theme for a poem and did not engage with the structural features of the genre. The appendix also contains both the human and the AI-generated poems. The human poem was created as a direct response to the generative AI poem.

5.5. Personal reflection

I have been writing poetry in one form or another for over 20 years and have a poetry website and five self-published volumes of poetry. For the most part this has been a solitary expressive and creative act, and it has been me that has generated the output as a creative agent. In 2023, I presented a paper with colleagues at the SITE Conference in New Orleans, US. As part of that paper, I began considering the possibilities of using generative AI to create poetry. I wondered what the possibilities are and how might these prospects shape me as a poet who is also a teacher educator.

This sparked a desire to experiment with generative AI as both poet and academic, towards seeing generative AI as not just as a random creator of text but as a potential writing companion in a transactional space of creative doing. I thought about my creative

output as a poet and how my creativity might be shaped through and with this technology.

So, I used the following prompt with GPT-4: "Construct a poem about human survival in a changing and uncertain world". This prompt reflected a theme I had explored with an older adult poetry group that I teach, and I was keen to see what the AI would do with it. The machine came up with seven four-line stanzas. My initial observations were that the first three stanzas, for the most part, were quite original and compelling and that there was quite a lot of synergy between what I intended and what the AI produced.

Rather than only using lines from the AI-generated poem in an instrumental way, I decided to respond to the poem in quite a dialogic way and reflect the existential concerns I have that are also reflected in the poem. It would be true to say that the AI poem evoked thinking and perspectives that I would not otherwise have had. So, I responded to the AI with my poem "Under the beacon light" like I was talking back to the AI.

5.6. Analysis

The journey of this solitary poet, who, over two decades, had only his own thoughts as the vehicle for expression, appears to have undergone a transformative intersection with technology. Human-machine collaboration, especially in poetry writing, has evolved significantly from the invention of word processing tools to advanced AI-enabled functions like autocomplete. A notable example is Google's "Verse by Verse" tool, which generates poetry influenced by styles of famous American poets, building upon an initial line provided by the user. Drawing from Ihde's (1990) concept of alterity, this collaboration positions technology as the "Other," an external entity that co-shapes the poetic output. Such intersections of humans and AI in creative processes challenge the traditional boundaries of authorship and introduce a new dimension of poetic co-creation (Schober, 2022).

At the outset, the poet's relationship with his craft has been intimate and singular. However, as technology seeps into this bond, the poet finds himself navigating a new terrain of relation - that between man and machine. Ihde's exploration into human-technology relations offers a prism to view this dynamic. One can argue that technology, specifically generative AI, becomes an extension of the poet, yet also distinct in its capacity to generate novel output. It appears that AI had status as an independent contributor while, at times, also standing as a tool that carries out directed tasks.

A palpable shift occurs as the poet interacts with the AI (Ihde's notion of shifting positions). Initially, the AI is a mere conduit for expression; yet, as the experiment unfolds, the poet finds himself in a dialogue with the AI, almost on an equal footing. The positions of creator and tool shift, mere, and diverge in this newfound dynamic.

The text also underscores an unfolding hybridity (Braidotti, 2013) that develops incrementally as the creative work is written. The poet embarks on a collaboration with an AI, giving rise to a blend of human creativity and algorithmic spontaneity. Braidotti's (2013) concept of hybrid roles and ways of thinking becomes ever more salient as the poet returns to the AI output to explore new perspectives on the chosen topic as the writing process continues. Boundaries between the poet and the tool appear to blur, forging a new hybrid entity where human expression and machine logic coalesce. This connects to Ihde's relationality ideas but presents a more dynamic and fluid intersection where the contributions of human and AI are increasingly commingled in a hybrid state (Braidotti, 2013).

This experiment with generative AI forces one to consider agency within the human and the material (in this case, the AI). Barad's (2003) assertion that humans and the 'other' (inanimate, material) possess agency finds validation. The AI is not a mere passive tool but an entity with its kind of 'influence' and 'power'. The resulting poem is not merely an output of command, but a creation shaped by human intention and machine interpretation.

With the introduction of AI into the creative process, ethical quandaries about authorship emerge. Levinas's (1969) exploration of ethical relationships and responsibilities serves as a foundation for thinking here. Who truly owns the resulting poem? Is it the poet, the AI, or a shared authorship? The act of 'talking back' to the AI with "Under the beacon light" transcends traditional notions of authorship, suggesting a deepened, ethno-onto-epistemological bond.

6. Discussion

In this section we present a series of reflections, insights, implications and speculations about the possibilities and challenges of using generative AI creatively and transactionally.

6.1. A fast-moving dynamic space

AI is a fast-moving, dynamic space that has profoundly transformed our world in a remarkably short period. The power of AI lies in its ability to evolve constantly, harnessing vast amounts of data and sophisticated algorithms to optimise, predict, and automate tasks that were previously the exclusive domain of humans, including creative expression (O'Dell & Jahankhani, 2021). In our limited creative engagement with generative AI in our two creative products it was immediately evident that something distinctly novel and powerful is emerging.

Daily news and social media regularly broadcast about breakthroughs in deep learning, neural networks, and reinforcement learning, revealing how these technologies are applied to diverse fields ranging from healthcare and finance to entertainment and transportation. Individuals, just like us, are already creating images, designs, and text through GAI, despite the current lack of clarity around ownership and ethical use.

The rapid pace of AI advancements challenges both creativity and research to remain adaptable and open to changes in how we work and what work we do. This dynamic environment fosters a culture of relentless innovation, where today's ground-breaking development can be tomorrow's old news, and creativity is disrupted and challenged in workplaces and in education.

However, this dynamism in AI that we experienced in writing a story and a poem also raises important ethical and societal questions. As AI systems become increasingly capable, concerns about ethical ownership of creations, job displacement, security, and privacy come to the forefront, especially in creative industries. With creative expression often identified as a uniquely human quality, and with advances in technology and AI, it is not yet clear how we measure where human creative output ends and AI creativity begins (Cremer et al., 2023). Indeed, in our creative 'experiments' described in this article, it was not always clear what are the creative boundaries between AI work and human work.

Balancing innovation with responsibility has now become crucial. As humans navigate this exhilarating and perhaps frightening era, we must approach the AI revolution with enthusiasm for its creative potential and mindfulness of its broader implications.

6.2. Posthuman thinking about generative AI

Posthuman thinking has the potential to reconceptualise the taken-for-granted boundaries between humans, machines, and the environment, challenging the tendency in the west and north towards anthropocentrism (Hasse, 2019; Henriksen et al., 2022). Within this understanding, generative AI emerges not just as a useful delineated tool for creative work but as an active and agential partner in co-constructing content and knowledge and shaping human experiences, which is what we found in our creative inquiry.

As generative AI systems interact with humans in creative and sometimes unexpected ways, as in this study, there may be blurring of the lines between the creator and who contributed to what was created, prompting questions about agency, authorship, and creativity (Murray, 2023). Do we control AI, or does it shape our perceptions and outputs in ways we will come to know as the technology further unfolds? Engaging with generative AI through a posthuman lens invites us to rethink our position in this entangled creative relationship, recognising that both humans and AI are potentially evolving in this entanglement.

6.3. Moving to relational possibility thinking with generative AI

Within intra-activities, the spaces where all entities actively merge and intertwine, there exists potential for a creative partnership with AI. Generative AI, while ground-breaking in terms of how humans might relate to machines, presents possibilities and limitations for creativity. For instance, at the present time generative AI responds more fluidly to a well-crafted prompt than to inserting creative works as asking for a response where there is a lack of specification. It also perceives the world not through holistic understandings that characterise humans, but through patterns and interconnections in large language sets, though with increasing sophistication (Broussard, 2018).

It does not have a stable identity and is not sentient or cognisant of human emotions at the present time. Still, it does have, we argue, the agency in acting creatively in the world with humans. While it might be argued that machines do not possess emotions and thus might not be considered as having a 'self' and otherness, we argue that such a view is merely anthropocentric, and that having otherness and agency does not depend on replicating human selfhood or emotional states (Li et al., 2024; Preston, 1991).

At its most basic level, AI simplifies tasks. Beyond simple task execution, we argue that it can adopt a range of roles in transaction with a human: as a creative partner, coach, or an instrument awaiting adept play. While it offers a guiding framework or structure and produces competent textual or visual materials, it sometimes lacks depth and granularity, often settling into generic patterns and repeated types of word usage that might be deemed 'vanilla'. This was evident in many of the AI generated verses of the poem in this study. At the same time, our experience is that AI can provoke fresh ideas and insights, suggesting it has status in dialogic spaces, though to what extent is still a matter for further research. Its semblance of dialogue might merely mirror human interactions, devoid of genuine equal agency.

Despite the perceived and proven limitations about what AI can do in collaboration with humans, new possibilities might be given birth. Hybrid collaborations between generative AI and humans might deliver unprecedented creative outputs in what might be considered postmodern junctures of possibility (Banks & de Graaf, 2020). This fusion harnesses AI's vast data processing in concert with human sensibilities, leading potentially to innovative textual, artistic, educational and problem-solving outputs. Together, human-machine hybridities might redefine boundaries, expanding the horizons of what is creatively possible.

6.4. Critically considering limitations and dangers of generative AI

GAI has ushered in a new era for creative production (Anantrasirichai & Bull, 2022), prompting a re-evaluation of the traditionally understood dynamics between machines and humans in the realm of creativity. As generative AI's computational capacities expand, it becomes increasingly bound to creative processes, from industry applications to academic research and educational possibilities (Anantrasirichai & Bull, 2022). However, this burgeoning relationship is not without challenges. Integrating AI in creative outputs presents pressing concerns regarding privacy and intellectual property (Dwivedi et al., 2023). For instance, if, as is the case in this study, a piece of content is co-created by both humans and AI, who owns the rights to it?

Furthermore, who can claim the right to distribute or repurpose the creation? As governments work towards unravelling the ethical and legal implications of generative AI, policies must focus more directly on creative output, but the creative process must also be understood in terms of the *how* as well as the *what*. The ethical and legal considerations in national AI policies centre around data, especially data sharing. They can be seen as overlooking nuances such as ethical algorithm development and comprehensive AI data management (Saheb & Saheb, 2023).

Problematic ethical biases can be reinforced using GAI through the unsupervised machine learning algorithms and the vast data sets through which generative AI models are trained. These challenges are ongoing, and answers cannot yet be provided in this emerging

and dynamic field. Furthermore, the ethics surrounding the use of generative AI in creative contexts cannot be overlooked. The nature of creativity, historically considered a deeply human activity, is potentially being transformed, leading to debates about authenticity and originality in AI-generated works (Gillotte, 2020).

There is also the question of aesthetics. When AI contributes significantly to a creative output, does it diminish the value or originality of the work? Assigning credit or merit becomes intricate as the lines between human ingenuity and machine generation blur (Eshraghian, 2020). In our textual creation we both sensed the ambiguities of human with machine. Moreover, introducing AI in educational and creative settings, as explored by the authors, presents another layer of ethical considerations, including how hybrid creative work might be assessed. This study has prompted creatives and policymakers to tread carefully to ensure that while learners benefit from AI's capabilities, they also understand and critically engage with its limitations and implications.

6.5. Creative production in the wake of generative AI: partners in expression

The advent of generative AI has revolutionised the creative landscape, ushering in an era where technological and human minds converge in producing art and original textual output, especially in genres such as poetry and story making. The introduction of AI into artistic expression should make us rethink and re-evaluate our understanding of creativity, agency, and the essence of what it means to be human in these creative enterprises.

Ihde's (1990) exploration of human-technology relations becomes paramount as we consider the relationship between the artist and AI. No longer is creativity a solitary endeavour (if it ever was); it becomes a symbiotic dance between human intention and machine algorithms. This relationship pushes the boundaries of traditional human-centric creativity, urging us to consider AI beyond its positionality as tool to a partner in what might be understood as a new form of distributed creativity.

The distinction between the human creator and the AI in these examples is increasingly nebulous, as we found in making our creative products. Generative AI is not merely an obedient scribe, mindlessly jotting down the artist's intentions as a digital dictation. It contributes, influences, and even challenges the creative process. This fluid boundary speaks to the changing dynamics where the roles of the AI as a servant and master fluctuate.

A profound question arises: Does generative AI have agency? As the output of GAI becomes increasingly sophisticated, it's evident that AI isn't a mere passive entity but an active participant. Sometimes AI can serve as a foundation upon which humans build, while other times, especially with more complex algorithms, it directs the course of creativity.

The genesis of every AI model lies in human-generated codes, trained on vast content generated by people. However, the future indicates that AI may develop unique creative footprints independent of its human origin. This transition poses tantalising possibilities and begs the question, what might AI enable us to conceive that previously remained out of reach?

In addressing the possible downsides of collaborating with AI in creative processes, developing strategies that mitigate risks while maximising benefits becomes essential. For instance, establishing clear guidelines on intellectual property rights and ethical boundaries can help navigate the complexities of co-creation with AI (Dwivedi et al., 2023). Moreover, transparency in algorithmic processes and the data used for training AI can alleviate concerns about biases and unintended consequences (Gillotte, 2020). Future research should also explore mechanisms for ongoing monitoring and evaluation of AI's impact in creative domains to ensure responsible use (Saheb & Saheb, 2023).

Considering that AI is a non-human entity, traditional human relational norms do not directly apply to the nature of partnerships with AI. This necessitates a redefinition of 'partnership' in this context. AI can be viewed as a dynamic participant in the creative process: It does not engage with human-like emotions or intentions but influences creative outcomes through its computational capabilities (Eshraghian, 2020). Future discussions might be about clarifying the role of GAI—from a collaborator to an inspirational companion—highlighting the fluidity and variability of these interactions. This exploration might benefit from interdisciplinary perspectives, combining insights from technology, ethics, philosophy and the arts to fully understand and articulate the new partnership between humans and artificial intelligence (Anantrasirichai & Bull, 2022).

At its core, the amalgamation of humans and AI in creative domains brings attention to our humanity. As AI mirrors, challenges, and complements our creative impulses, we get a deeper insight into our desires, fears, hopes, and limitations. It pushes us to explore realms of thought and expression we might have shied away from or never even considered. GAI could be seen to thus magnify the human experience, causing us to question and redefine the parameters of art, and most importantly, discover novel facets of our own humanity. Far from diminishing the value of human creativity, GAI might serve as a catalyst, propelling us into a future where art, aided by technology, reaches unprecedented heights.

6.6. Educational implications

Our exploration of human-AI creative partnerships has significant implications for education. The findings suggest that generative AI can serve as more than just a static tool, potentially becoming a collaborative partner in creative learning experiences across all sectors of education (Baidoo-Anu & Owusu Ansah, 2023; Fabri et al., 2023). This shift challenges traditional pedagogical approaches that position the teacher at the centre and raises important questions about how AI might be integrated in a balanced way into educational settings.

The research suggests that AI in a range of educational settings can enhance creative output by offering novel perspectives and ideas and enhancing the efficiency of productive processes (Holmes et al., 2023; Rafner et al., 2023), as evidenced in both the story and poetry examples. However, educators must carefully balance AI assistance with maintaining authentic human creativity, learning and output that would be assessed. This requires developing new frameworks for assessment that acknowledge hybrid human-AI creations while ensuring students develop essential creative and critical thinking skills afforded by AI.

The study also highlights the need for educators to understand AI's limitations, biases and ethical considerations, including issues of authorship and intellectual property (Murray, 2023). Professional learning might focus on helping teachers understand how to effectively partner with AI while fostering students' ability to critically engage with AI-generated content and maintain their creative agency. Thus, the integration of generative AI into education offers transformative opportunities but necessitates careful pedagogical adaptation.

7. Conclusion

This collaborative autoethnography explored the intersections of generative artificial intelligence (GAI) and creative endeavours, with a particular focus on understanding the dynamics of collaboration between humans and machines. Our approach combined theoretical analysis and practical experimentation to unravel the complexities of authorship, ownership, and the transformative potential of AI in democratising creative pursuits. This has implications, especially in educational settings.

One of the most profound realisations was the inherently relational nature of creating artistic work with AI. This relationship is neither static nor predefined; it is constantly in flux and characterised by ever-shifting power dynamics. Our findings shed light on the significant promise of AI in fostering engagement in artistic domains, as well as in education.

However, this research was not without its limitations. Several questions were posed, and while our study laid some groundwork, it did not answer all of them definitively. Our interpretations and insights are largely grounded in our personal experiences with GAI. While these observations were useful, we make no claim that they encapsulate the full range of interactions others might have with similar AI tools. Despite these constraints, this study introduces provocative concepts that can serve as a launchpad for future research endeavours.

While the lens for this article might be narrow, the ideas proposed are expansive and beckon other scholars to investigate more deeply with larger data sets.

A further limitation, and possible future research focus, was our inability to prompt the AI to reflect on its creative process and the human-authored outputs, due to the technological constraints at the time. Future research could explore this aspect, leveraging advances in AI to deepen our understanding of AI as a collaborative partner in creativity and AIs ability to rationalise and position itself in the creative process.

Finally, our methodological approach is not without its challenges. Autoethnography, while valuable for exploring the emergent field of AI and generative creativity, has inherent limitations. Its personal nature can introduce biases as researchers interpret their own experiences and creative outputs (Ellis, 2003) and these biases may affect the plausibility of findings. However, autoethnography remains a powerful method for this domain, providing rich, contextual insights crucial for understanding the complex, and novel, dynamics of AI-driven creativity (Chang, 2013).

Looking ahead, the evolution of AI is poised to be both disciplinary and sector specific. We anticipate the rise of GAI applications tailored for industries and contexts where interactions and relational opportunities are designed based on discrete needs, especially including those in education. AI's exact role and influence within these sectors remain a topic of speculation, signalling an emergent phenomenon that remains in its nascent stages. As we stand on the cusp of this new era, researchers and practitioners alike must engage critically with these evolving dynamics, shaping a future in which AI augments human creativity in nuanced and ethically sound ways.

CRediT authorship contribution statement

Edwin Creely: Writing – review & editing, Writing – original draft, Visualization, Validation, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Jo Blannin:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Appendix 1

Initial prompt given to ChatGPT and subsequent output (annotated screenshots):

The Prompt

Write me a main character description of a girl (8 years old). Provide detail about her life, background, family and schooling. Explain why this child might be interested in AI or suggest the type of adventures she enjoys that might suggest an AI plot for the story.

Output:

Meet Lily, an imaginative and curious 8-year-old girl with a passion for exploration and problem-solving. Lily lives in the cozy town of Springville, where the meadows stretch far and wide, and the scent of wildflowers fills the air. She resides with her caring parents, Mr and Mrs. Johnson, and their mischievous pet cat, Whiskers.

Growing up in a household of technology enthusiasts, Lily's love for innovation and adventures began early. Her father, a software engineer, often shared captivating stories of how machines and computers could think and assist humans in their daily lives. Lily would sit wide-eyed, her mind filled with wonder and curiosity, eager to learn more.

Attending Springville Elementary School, Lily's favourite subject is science. She loves conducting experiments, studying the stars, and discovering the hidden wonders of the world. Her classmates admire her for her keen intellect and imaginative ideas. During recess, Lily can be found exploring the school's garden, where she befriends the resident robotic gardener, Sparky, who helps tend to the plants and flowers.

Lily's adventures often involve solving mysteries and unravelling secrets, making her the perfect candidate for an AI-themed plot. In one of her escapades, Lily stumbles upon a forgotten laboratory in an old cottage on the outskirts of town. She uncovers a hidden journal filled with notes about an abandoned AI project. Intrigued, Lily decides to revive the AI and, with her friends, embarks on a thrilling journey to help it find its purpose and understand the world around it.

Her fascination with AI stems from her desire to create something that can positively impact people's lives. Lily dreams of a future where machines and humans work together, bringing forth innovative solutions to make the world a better place. Through her adventures, she hopes to introduce young readers to the wonders of artificial intelligence and ignite their curiosity about technology and its potential.

With her boundless imagination, unwavering determination, and a heart full of kindness, Lily serves as a delightful guide into the enchanting world of AI, inspiring young readers to explore their own creative ideas and embrace the possibilities within the realms of artificial intelligence.

Final human-created creative output



Appendix 2 (annotated screenshots)

The prompt:

Construct a poem about human survival in a changing and uncertain world using GPT-4.

AI generated poem

In a world of constant flux, an ever-turning sphere,
Beneath the ever-watchful stars, we harbor quiet fear.
Change, the great unknown, it dances with the night,
And in its eerie shadowed hands, holds our fragile plight.

Torrents of technology, evolving as we breathe,
Silent in its progress, like a sword unsheathed.
The old gives way to new, as the seasons in their turn,
In the furnace of uncertainty, where destinies are churned.

Yet in this swirling chaos, a beacon lights the way,
The indomitable human spirit, brighter than the day.
We are creatures of resilience, made of stardust and of grit,
Against the tides of time and change, we shall never quit.

[There were four more stanzas but for this analysis only the first three are used]

Created poem drawing on ideas and words from AI, responding to the
AI-generated poem and creating my own poem:

Under the beacon light

This constant flux in an ever-turning sphere,
moves beneath the watchful stars
that witness the quiet fear
and the great unknown.

Evolving we breathe shallow and rapidly,
as the old gives way to new,
as the seasons churn,
and no beacon lights the way.

Humanity, the mariner bold, navigating oceans vast,
surviving, always striving, learning from the past
but now not so sure, uncertain,
under the gaze of the shifting stars.

We dance with the tempest we cannot see,
and ride the tides of transformation,
as they rise and fall,
but in whom do we trust?

We used to believe in constants,
and the resilience of humankind
as givens under the luminosity of the sun,
but that now burns with uncertainty in the race to where?

Where are you, dreamers?

To what do you dare under the stars,
in a world in which we are the avatars?

Where is the truth under the beacon light?

Data availability

Data will be made available on request.

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