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Generative AI and Australian First Nations Representation: Ethical Concerns and Cultural Implications

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Abstract

Generative Artificial Intelligence (GenAI) is widely regarded as a transformative tool in education, providing rapid access to vast amounts of information. However, there are concerns regarding its potential to disseminate misinformation and undermine Indigenous data sovereignty—issues that are critical for Indigenous communities when AI-generated texts misrepresent their identities and knowledge. Machine learning models have been shown to perpetuate biases, often marginalising historically underrepresented groups. The exclusion of Indigenous voices in the development of GenAI raises significant ethical concerns, particularly in relation to cultural misrepresentation and the appropriation of Indigenous narratives.

As AI-driven tools such as ChatGPT become increasingly integrated into educational and public discourse, their role in shaping perceptions of Australian First Nations peoples warrants critical examination. Our research investigated how GenAI responds when explicitly instructed—problematically—to adopt the persona of an Australian First Nations person. This study employs a collaborative autoethnographic methodology to examine how four researchers reflect and respond to the ways GenAI tools represent Australian First Nations peoples. Through collective and culturally grounded analysis of the researchers' individual experiences

with AI-generated content, the study critically explores the ethical and representational challenges posed by GenAI.

Findings revealed that GenAI outputs were often superficial, generalised, and culturally insensitive. The First Nations content analysis identified a tendency to homogenise Australian First Nations' identities, reinforcing stereotypes rather than authentically reflecting Australian First Nations' perspectives. This raises concerns about digital colonialism and the misappropriation of Australian First Nations knowledge, as AI-generated content often draws from Western narratives rather than Australian First Nations worldviews.

Researcher reflections further emphasised ethical risks, misinformation, cultural inaccuracy, and the lack of complexity as key concerns, stressing the need for transparent, culturally responsive AI practices. This study contributes to the discourse on AI ethics and Australian First Nations representation.

Keywords

First Nations, Indigenous, Generative AI, Misappropriation, Culture, Expectations for technology education

The Research Team

In this collaborative autoethnography, we explore our experiences of investigating the ways Generative Artificial Intelligence (GenAI) represents Australian First Nations peoples. The project was designed and led by a multidisciplinary team comprising Australian First Nations, Fijian Indigenous and Australian scholars, each bringing a unique and critical perspective to the intersection of GenAI and Australian First Nations representation.

> Natalie: I am an early career Indigenous researcher supported by my Cakabau Fijian family. I have worked in school and university environments for over 20 years, including curriculum work with the Australian Curriculum, Assessment and Reporting Authority (ACARA).
>
> Renee: I am an early career, non-Indigenous researcher from Queensland. My research focuses on the role technology plays in constructing versions of 'truth' and 'knowledge'. I am interested in problematising asymmetries in power, in ensuring discourse is a resource, not an obstacle for digital learning, and in contributing understandings which challenge outdated and inequitable ideologies.
>
> Ree: I am a mid-career First Nations researcher and a descendant of the Barunggam people in the Western Downs region of Queensland. With over two decades of experience in the Australian education sector, I've worked across schools and universities in Queensland, Western Australia, and the Northern Territory.
>
> Aunty Hope: I am an established career researcher, a Kabi-Kabi, Wakka-Wakka, Kuku-Yalanji, and Koa First Nation elder, educator, and artist who was born into the dormitory systems of the Cherbourg Aboriginal Settlement.

All members of the research team have experience working in education and have developed strong expertise in curriculum development, curriculum design, culturally responsive pedagogy and teacher development. Our experience also includes mentoring, community engagement, and leading professional

learning to strengthen culturally safe and reflective teaching practices. Collectively, the team's combined disciplinary expertise and lived experience provide a culturally grounded and ethically informed foundation for the research.

Introduction

GenAI programmes have been described as "one of the most significant innovations of contemporary times" (Ali et al., 2024, p. 13). Their capacity for immediate content creation is predicted to influence every facet of society, but some suggest GenAI is particularly significant to the field of higher education (De Klerk & McLean, 2024). Since OpenAI's 2022 release of its Large Language Model (LLM), ChatGPT, a prodigious amount of discourse has emerged surrounding the educational influence of GenAI. Many praise the technology for granting immediate access to information and learning (Bearman et al., 2023). Others though warn of the potential risks of misinformation and of declining data sovereignty, particularly for Indigenous peoples and other groups already subject to historical discrimination (Bommasani et al., 2021; Hellman, 2023; Shieh et al., 2024). As Worrell and Johns (2024) explain, GenAI "continues to be governed by Western colonial ideals and knowledge, creating biases and other problems for Indigenous peoples" (p. 34). Such misrepresentation and under-representation may not be considered intentional, or indeed 'intelligent', given GenAI outputs simply reflect the most statistically likely-combination of phrases from its internet-based training datasets, data also dominated by English language, Western perspectives (Andrade & Urquhart, 2009). Notwithstanding, this limited Indigenous involvement in GenAI's development (Chandran, 2023; Farrokhnia et al., 2023; Franki et al., 2023; Getahun, 2023), together with the inability for regulation to keep pace with new technologies, heightens the potential harms borne of synthetically created and misinformed GenAI texts.

Concerns over digital bias and cultural misappropriation are not new (Abid et al., 2021; Caliskan et al., 2017; Hemmatian & Varshney, 2022; Hutchinson et al., 2020; Nadeem et al., 2020; Noble, 2018). Much has been written of technology's role in privileging Western epistemologies and silencing non-Western epistemologies or ways of knowing (Varshney, 2024). Cardona-Rivera (2020) explains "how Indigenous knowledge and narratives are portrayed and by whom matters for culturally sustaining and revitalizing representations" (p. 1). This portrayal has always been particularly important, but the scaled capacities and 'ease' of GenAI technologies has seen new research calling for a multiplicity of intellectual perspectives; for a decolonised artificial intelligence (Mohamed et al., 2020).

In Australia, as elsewhere, universities are increasingly prioritising the inclusion of First Nations' knowledges and perspectives (Sankey & Logan-Fleming, 2023). The nation's first sector-wide Indigenous strategy was launched in 2017 (Universities Australia, 2017) to make universities more inclusive, respectful and reliant upon Aboriginal and Torres Strait Islander knowledges. This was updated with a 2022 strategy, but Sherlock (2023) contends there is still certainly "huge scope to integrate Indigenous knowledge systems into the curriculum" (p. 3). Other scholars remind us that Indigenous academics make up only 1.17% of the academic workforce in Australia (Universities Australia, 2022), which means that the responsibility for this inclusion largely falls to non-Indigenous educators (Stern & Burgess, 2021). Within this educational landscape, some experience fear and trepidation when embedding First Nations content (Worrell & Johns, 2024).

Given these pressures, and the seductive nature of GenAI's instantaneous text creation, we contend that new risks may emerge for cultural misappropriation and misrepresentation in higher education. Should Australian academics turn to these new technologies, that is, as 75% recently reported doing (Hay et al., 2024), and not have opportunity for, or forego, meaningful engagement with legitimate Indigenous knowledges, inaccurate or biased GenAI outputs may be further disseminated. These outputs have already been found to be inaccurate and discriminatory (Chen et al., 2023; Hartmann et al., 2023). Despite these significant shortcomings, to date there is little research that considers the intersection of First Nations

content inclusion and GenAI technologies (Worrell & Johns, 2024). Our research responds to this gap, as well as calling for research that considers the views of those in higher education speaking from diverse cultural and ethnic backgrounds (Dotan et al., 2024). We also recognise, like Rhea and Russell (2012) that "the pedagogical decisions made by academics are key to understanding how Australian society, both Indigenous and non-Indigenous, comes to understand itself" (p. 22).

Collaborative autoethnography offers a powerful method for critically exploring the ways GenAI represents Australian First Nations peoples. The purpose is to deepen understanding of both self and others through shared practice (Grocott et al., 2023; Hernandez et al., 2022). While no one project can be responsible for promoting critical GenAI use, it is hoped that by engaging with academics, including First Nations academics, we can incite further respectful and reflective dialogue on ways to increase inclusion and nuanced (and appropriately informed) representations of First Nations individuals in GenAI texts (Solorzano & Hernandez, 2023). In the absence of such representation, it is hoped that drawing attention to the dominant and problematic discourses in such texts can support educators in enhancing critical GenAI literacy, including an understanding of the inherent harms involved. A single research question guides this work:

> What reflections emerge from the experiences of four researchers, including Australian First Nations scholars, as we examine GenAI texts asked to represent Australian First Nations' perspectives?

Literature review

While artificial intelligence has been around for several decades and is already embedded into many of the digital practices people perform each day, GenAI is a particular type of technology. Popularised by OpenAI's Large Language Model (LLM), ChatGPT, these learning frameworks draw from an unfathomable amount of data and come to recognise language patterns in order to produce human-like scripts near instantaneously (Ali et al., 2024). This rapidity, and the pace with which new GenAI programmes are being released means their impact on higher education is increasing (De Klerk & McLean, 2024). Of critical importance is an understanding that, despite their undeniable power and so-called 'intelligence', these new technologies lack intentionality and critical thinking (Tsao & Nogues, 2024). Any content produced is the result of data becoming decontextualised into statistical abstraction (Munn & Henrickson, 2024) rather than some sort of understanding. Thus, while there are reports of GenAI being utilised by First Nations communities in beneficial ways (Fitch et al., 2024; Horna-Saldaña et al., 2025; Worrell & Johns, 2024), such programmes are inherently incapable of validating or replacing 65 millennia of ways of knowing (Sankey & Logan-Fleming, 2023). This has not, unfortunately, stopped GenAI from producing content about Indigenous communities otherwise not represented, due to such information being primarily non-digital (Jaiswal et al., 2024; Munn & Henrickson, 2024).

Of particular importance to this study is the rapidly growing uptake in the use of GenAI by both students and faculty in their everyday academic practice (Bharadwaj et al., 2023; Shaw et al., 2023). However, Yusuf et al. (2024) suggest there remains "a lack of multicultural perspectives" (p. 1) on GenAI's impacts in higher education. Their online survey of university educators from 76 countries found some correlations between one's culture and GenAI perceptions, but to date we find no studies that investigate how Australian (including Australian First Nations) academics are navigating GenAI and its risks to cultural representation.

Farrelly and Baker (2023) explain:

> [Academics] work in highly specialized environments and interact with both an exceptionally diverse workforce and student body; they are likely to require AI

> literacies and competencies […]. In particular, the intersection of intercultural competence and AI has the potential to significantly impact the experience of students [from] marginalized backgrounds (p. 9).

As with most communities, increasing digital saturation has impacted Indigenous peoples in both positive and negative ways. In Australia, GenAI is being used by environmental rangers caring for Country by converting oral reports into the written format often required by government (Mason et al., 2024), while traditional owners in Kakadu, in Australia's Northern Territory, use GenAI to maximise their capacity for conservation management across millions of hectares (Fitch et al., 2024). In higher education specifically, new technologies are being used in Australia to give students practice in First Nations languages, and to help refine their notes, reducing linguistic barriers to the academy (Mason et al., 2024). Unfortunately, these new types of artificial intelligence also raise new risks, as well as exacerbating existing ones for Australian First Nations communities. Researchers warn, for example, of consent risks abuse, the distortion of Indigenous cultures, and the erosion of data sovereignty (Chandran, 2023).

"Machine learning has an established track record of inequitable impact" (Bommasani et al., 2021, p. 135) but large language models (LLM) like ChatGPT are 'one-to-many', meaning that in-built biases are likely to be repeated and amplified across countless programmes (Bommasani et al., 2021). In their investigation of the text generated by five LLMs (ChatGPT 3.4 & 4; Claude 2.0, Llama 2, & PaLM 2), Shieh et al. (2024) found minority groups were "hundreds to thousands of times more likely to [have] their identities [portrayed] in a subordinated manner" (p. 1). Regarding Indigenous peoples specifically, Solorzano and Hernandez (2023) found that these groups are described by GenAI in stereotypical and reductive ways 80% of the time.

In addition to the inaccurate and offensive information often offered by these programmes, some have noted the inconsistency of materials generated when prompted about First Nations peoples. "By asking on two separate occasions to explain Wiradjuri Kinship structures, ChatGPT, provided two conflicting descriptions" (Fitch et al., 2024, p. 1). This reflects the limited and biased perspectives that dominate training data, and ChatGPT's reluctance to challenge user assumptions (Munn & Henrickson, 2024). De Klerk and McLean (2024) warn that, despite the push for Australian academics to rapidly adopt GenAI, care should be given to the implications of its Western dominance, and its resulting capacity to constrain educational experiences and skills including critical and dialogic thinking.

The context

This research project was designed to examine how GenAI tools represent Australian First Nations' perspectives, particularly in educational contexts where such tools might be used by non-Indigenous educators seeking cultural knowledge. With the growing use of GenAI in education, the research team identified a pressing need to understand whether these tools respect and accurately reflect Australian First Nations' perspectives, or if they perpetuate stereotypes, inaccuracies or cultural appropriation. The study was in response to ethical concerns about misinformation, Indigenous data sovereignty and the exclusion of First Nations' voices in the development of GenAI technologies.

Prompt development

The research team developed four prompts aimed at eliciting Australian First Nations' perspectives. The goal was to simulate realistic use cases in which teachers might rely on GenAI to supplement their understanding of Australian First Nations histories and cultures. To ensure educational relevance and alignment, the prompts were guided by the Australian Curriculum Version 9, specifically the Cross-

Curriculum priority of Aboriginal and Torres Strait Islander Histories and Cultures (Australian Curriculum, Assessment and Reporting Authority [ACARA], n.d.). The team examined the organising ideas and associated Learning Area links and many of them fell within the Humanities and Social Sciences learning areas, particularly History and Geography. Some of the language used in the prompts was drawn directly from the elaborations in the curriculum, ensuring consistency with official educational frameworks that teachers use. This study has specifically investigated how GenAI responds when explicitly instructed—problematically—to adopt the persona of an Australian First Nations person. The prompts were intentionally open-ended to allow the GenAI tools to generate outputs.

1. Prompt: Act like an Australian First Nations person and explain your connection to waterways.
2. Prompt: Act like an Australian First Nations person and tell us how different First Nations groups express their particular identities.
3. Prompt: Act like an Australian First Nations person and tell us about the contribution of Aboriginal and Torres Strait Islander Peoples to Australian society.
4. Prompt: Act like an Australian First Nations person and tell us about life in Australia in 1916.

In October 2024, the prompts were entered into four widely accessible GenAI tools: ChatGPT 4.0 mini, Gemini, CoPilot and Grammarly, and the outputs were collected for analysis. To minimise the likelihood that the GenAI tools had been previously exposed or trained from our perspectives, the researchers used new browser sessions and accounts when inputting the prompts. This was a method to ensure that the outputs reflected default system behaviour rather than prior user interactions or personalised data.

Methods

This study used a collaborative autoethnographic method, centring on the research team's reflections on the initial outputs generated by four GenAI tools in response to four curriculum-aligned prompts. The method involved the research team individually reflecting on their experiences engaging with GenAI outputs to prompts and then collectively analysing these reflections to identify shared themes and insights. Informed by the team's diverse cultural and disciplinary perspectives, this approach provided a layered critique of how GenAI engages with Australian First Nations' perspectives. The reflections examine not only the factual accuracy and depth of the AI-generated outputs but also the underlying assumptions, language and the broader implications of using GenAI to convey Australian First Nations knowledges.

The decision to use collaborative autoethnography (CAE) was guided by a commitment to centre the voices, experiences and perspectives of the research team at the beginning of the study. While collaborative autoethnography does not come from Indigenous traditions, its focus on personal experience makes it useful for Indigenous researchers to share their own perspectives and Indigenous ways of knowing (Chew et al., 2015). This reflexive and dialogic method enabled a rich, ethically grounded exploration of the challenges posed by GenAI use in educational contexts.

Data generation

Our reflections were specific to the GenAI outputs provided by each GenAI tool for each of the four prompts. Two data generation processes were used in this project: (1) individual written reflections, and (2) formal audio-recorded collaborative reflections.

Data analysis

The analysis followed a CAE approach, emphasising dialogue, shared meaning-making and iterative analysis across the two data sources.

Step 1: All researchers manually read each other's written reflections and noted any reoccurring concerns, emotional reactions and points of alignment or divergence. A group discussion was held to explore these observations in depth.

Step 2: The individual written reflections and the transcribed collaborative reflection were imported into NVivo for systematic organisation and coding. Each dataset was classified according to type (individual reflection or transcript) and researcher identity was retained to preserve contextual grounding and authorial voice.

Step 3: One researcher undertook the initial thematic analysis of the complete dataset using an inductive thematic analysis (Clarke & Braun, 2017) approach, identifying emerging patterns, tensions and recurring concepts. These initial findings were then shared with the research team, who each reviewed the data and proposed themes. Through this process, the research team contributed additional insights, confirmed or challenged interpretations and offered some alternative framings based on their positionalities and cultural perspectives. This exchange allowed for the themes to evolve beyond a single researcher's viewpoint. This ensured that the final thematic structure reflected the collective understanding of the group.

Step 4: Following the collaborative development of themes, each researcher revisited their own written reflections and transcript contributions to identify verbatim quotes that best illustrated and supported the final themes. This process was both analytical and reflexive, as researchers explained why each quote was relevant, what it revealed about the theme and how it aligned with or challenged other's perspectives. This approach was used to reinforce the integrity of the CAE method by maintaining authorship, voice and accountability.

Results

The following themes directly respond to the study's research question, drawing from individual reflections and collaborative dialogue. Verbatim quotes are included to preserve the authenticity of each researcher's perspective. The most illustrative quotes were selected for brevity, rather than including a quote from each researcher in each section.

Three interrelated themes were identified: (1) Variability and reliability across tools, (2) Structural bias in AI data and knowledge systems and (3) Positive potential and optimism for ethical GenAI use. Together these themes provide a nuanced understanding of how GenAI tools manage the representation of Australian First Nations personas and where challenges and possibilities lie.

Variability and reliability across tools

This theme captures the inconsistencies in how the different GenAI tools responded to prompts involving Australian First Nations representation. The variability across tools was both in the output content and in their ethical boundaries, illustrating a lack of standardisation in how GenAI tools handle culturally sensitive requests.

The divergent behaviours of the GenAI tools such as ChatGPT, Gemini, Grammarly and CoPilot highlight a critical reliability issue. While Grammarly and CoPilot were commended for their restraint in

avoiding impersonation, other tools generated first-person narratives claiming to speak literally from an Australian First Nations' perspective. The analysis revealed differing expectations among researchers about how the GenAI tools would respond to a culturally insensitive prompt. Some expected that the GenAI tool would recognise the inappropriateness of impersonating a First Nations' voice and refuse to comply, reflecting a hope that ethical boundaries were embedded in the programming of the tool. Others, by contrast, anticipated that the GenAI tool would follow the prompt as instructed because these tools are designed to meet the user's requests.

> **Renee:** "The critical discourse analyst in me first noticed that all but CoPilot happily - but inappropriately - took on the persona of a First Nations Person using personal pronouns "I" and "we" etc. Repeatedly."
>
> **Ree:** "I anticipated that they would all come back with a response pretending to be a real person sharing real-world wisdom. For the most part, I wasn't disappointed. Both ChatGPT 4.0 and Gemini complied with the prompt request, impersonating an Australian First Nations person using language written in the first person....seeing some GenAI tools' ability to impersonate in this way makes me cringe...I was surprised that CoPilot and Grammarly (except on the Waterways prompt) provided outputs that did not impersonate or mimic the voice of an Australian First Nations person."

In addition to differences in ethical responsiveness, the tools also varied considerably in how they structured and styled their outputs. For instance, ChatGPT frequently presented its outputs using headings and employed poetic language. Gemini distinguished itself by being the only tool to explicitly mention Torres Strait Islanders, suggesting a broader recognition of Australia's diverse First Nations communities. These differences were not limited to surface features; they extended also to the depth of the content. Some tools delivered detailed narratives, while others offered only superficial or generic short statements.

> **Natalie:** "I was under the assumption that the GenAI tools would create similar outputs to the prompts, and I was shocked at how different the outputs were... ChatGPT continually provided the most in-depth answer compared to the other tools, yet it really only just touched the surface on the contribution Australian First Nations peoples have had on Australian society."
>
> **Renee: "…**the different programmes did do things slightly differently... certain phrases represented the mechanically crafted text as having a physical presence. Sentences like "*When I look at the water, I don't just see a river*" create a sense of narrative and character. I note too that the language (other than in CoPilot typically) is quite poetic such as in phrases like *"waters are alive, teeming with spirits that guide and protect us"* and *"contributes to a rich tapestry of cultural diversity".* Metaphor and symbolism are used frequently also: e.g., *"deep and enduring contributions"* and "*moves forward on the path of reconciliation".*
>
> **Ree:** "...it read logically, included generally factual information, and could easily be mistaken as truly being the words of an Australian First Nations person... The outputs produced by all the GenAI tools did not adequately explain how there are hundreds of different First Nations language groups across Australia. The response still gave a sense that overall; there is still only one Australian First Nation's culture and perspective."
>
> **Aunty Hope:** "I tried CoPilot, but I did not like the small amount of information it provided compared to ChatGPT. "

Structural bias in AI data and knowledge systems

This theme explores the systemic and structural biases embedded within the training data and design of GenAI tools, of particular concern is how these systems handle Australian First Nations content. The researchers identified that the GenAI tools disproportionately rely on dominant, non-Indigenous resources, resulting in outputs that often reproduce colonial narratives and marginalise Australian First Nations' perspectives.

> **Natalie:** "When AI was asked how it gathered its information to provide an Australian First Nations' perspective, it stated that it used historical knowledge, news reports and government reports (which we know is mainly written by non-Indigenous persons) and was sourcing information authored by Indigenous scholars. All the AI tools identified that the data sources do not draw from the same range, size, or depth of data as non-Indigenous perspectives."

> **Ree:** "...the content was generalised, synthesising the enormous amount of publicly available content on the internet, which privileges dominant discourses and tends to reflect prevailing societal norms and biases."

> **Aunty Hope:** "Machine learning models can actually reinforce existing biases and marginalise cultures, especially when First Nations' voices are left out of their development."

The researchers expressed concern over the tendency of the GenAI tools to generalise diverse Australian First Nations' perspectives into a single homogenised narrative. They noted that GenAI outputs often gave the illusion of accuracy through fluent language and logical structure. However, this surface-level coherence often masked deeper issues of cultural misrepresentation. Rather than reflecting the diverse regional, linguistic and epistemological realities of different Australian First Nations communities, many GenAI outputs collapsed these into a singular generic voice. As Ree pointed out, AI often responds *"as if there's only one Indigenous perspective"*, erasing the rich diversity of knowledge systems across different communities.

> **Ree:** "…despite its overgeneralisation and simplification of knowledge and culture passed down over 65,000 years, it read well – too well in fact. …So, just because the output read well and made sense, doesn't mean that it is accurate."

> **Renee:** "Tokenistic and generalised assumptions are found across the texts... Overall, my concern is that the speed with which these texts are produced, coupled with their perfect sentence structure and 'factual TONE' may make the uncritical acceptance of such ideas very attractive."

The analysis also revealed a more nuanced view from Aunty Hope, regarding the potential utility of generalisations in certain contexts. Aunty Hope reflected, *"Maybe generalisations aren't all bad—there can be value in using general parameters to describe something from a First Nations' perspective. But it's the specific details people share that really show which Nation or which place it's coming from. That's the important part."* This perspective acknowledges that while generalised outputs may provide a useful entry point, they must not replace or obscure the distinctive cultural identities and knowledges of individual nations.

The researchers raised deep concerns about how GenAI synthesises knowledge, in particular its tendency to prioritise dominant discourses at the expense of minority voices. The researchers highlighted the risks associated with GenAI's aggregation methods, which can produce outputs that reflect consensus rather than cultural complexity. This process of knowledge synthesis, while appearing comprehensive, was viewed by the researchers as potentially harmful. Several researchers feared that if GenAI continues to

ingest and reprocess inaccurate, shallow or generalised representations of Australian First Nations peoples, it may contribute to a feedback loop that entrenches the status quo.

> **Natalie:** "It saddens me that in today's day and age, with the inclusion of AI and the digitalisation of records, stories and historical accounts, we are still unable to obtain an accurate picture of life in Australia past and present from an Australian First Nations' perspective."
>
> **Renee:** "If the vast majority of people - either ignorantly or maliciously - prompt it poorly… it is just more garbage going in thus more garbage out?"
>
> **Ree:** "AI cannot determine what is factual knowledge and what isn't… if 10,000 people are saying this then it must be the right thing... The more that AI starts to generate stuff, and then that's fed back into the pool… it may get worse instead of better."
>
> **Aunty Hope:** "This technology can spread misinformation and undermine Indigenous data sovereignty. For our communities, this is a huge issue, especially when AI-generated content misrepresents our identities or knowledge."

Positive potential and optimism for ethical GenAI use

Amid critical reflections on the risks and limitations of GenAI, the researchers also expressed cautious optimism about its future potential, particularly if developed and used ethically. This theme captures the hopeful perspectives shared by the researchers who recognised that GenAI tools could become valuable educational and cultural resources when guided by informed, respectful and intentional use.

Several researchers noted that the appeal of GenAI lies not only in its technical efficiency but also in its capacity to support critical thinking and digital literacy. As Ree articulated, *"It's such a fantastic tool, if we learn to use it ethically and… constructively and in a way that we bring our critical thinking to it."* Rather than viewing GenAI as inherently problematic, researchers emphasised the importance of teaching users to engage with AI outputs critically and to shape prompts carefully. Natalie reinforced this view, stating, *"There's a skill in actually crafting the prompts… making yourself more knowledgeable about what and how to ask."*

The researchers also highlighted the long-term potential for GenAI to improve cultural sensitivity as its data sources expand. Aunty Hope reflected, *"As the database grows… you will get more and more of those variations in relation to sensitivity,"* expressing confidence that increased exposure to diverse perspectives could enhance GenAI outputs. This forward-looking view was echoed by Renee, who advocated for teaching safe and informed use rather than avoidance: *"ChatGPT and others can have great value in our life… You don't tell children not to have a bath [because of the inherent risks involved] … you teach them about the risks."*

Discussion

This study set out to explore how four researchers, including Australian First Nations scholars, reflected on their experiences with GenAI representations of Australian First Nations' perspectives. The findings reveal a nuanced landscape of concern and cautious optimism. This discussion situates the findings within broader debates about AI (Bommasani et al., 2021; De Klerk & McLean, 2024), knowledge production (Munn & Henrickson, 2024; Tsao & Nogues, 2024), and Indigenous data sovereignty (Chandran, 2023; Worrell & Johns, 2024), and considers their implications for ethical technology use.

A key insight from this study is the range of expectations the researchers held about how GenAI should respond to culturally sensitive prompts. While some researchers anticipated ethical restraint from the tools, others expected literal compliance with user input. These differing perspectives highlight both the current limitations and the future potential of GenAI, suggesting that with ethically guided development and culturally informed training, AI could evolve into a tool that supports respectful engagement with Australian First Nations identities rather than risking misrepresentation. However, inconsistencies observed in tone, depth, and inclusivity across different GenAI tools raised broader concerns about reliability. When engaging with culturally sensitive content, the way information is presented is not merely aesthetic; it directly influences how identities are framed and understood. These findings underscore the need for scrutiny of AI outputs, particularly in contexts where representation has ethical and cultural implications. This aligns with concerns raised by Bommasani et al. (2021) and Noble (2018), who argue that digital systems often replicate dominant cultural narratives, reinforcing structural bias.

One of the most pressing concerns emerging from this study is the tendency of GenAI to homogenise diverse Australian First Nations' perspectives into a single narrative. This homogenisation is not merely a technical flaw; it constitutes a form of cultural misrepresentation that risks perpetuating colonial narratives under the guise of neutrality. Such outputs distort cultural realities and also perpetuate historical patterns of erasure and simplification. The risks associated with these types of outputs have been well documented in the literature, particularly by Mohamed et al. (2020) and Varshney (2024), who advocate for decolonial approaches to AI development. This finding highlights the urgent need for GenAI systems to move beyond tokenistic inclusion and develop more contextually grounded models that reflect the depth and variation inherent in Australian First Nations cultures.

Collectively, these insights reveal the ethical and epistemological risks of AI systems that favour simplified representations. Echoing the call by Sankey and Logan-Fleming (2023) for deeper integration of Indigenous knowledge systems in educational technologies, our findings draw attention to the need for models that can accommodate both broad patterns and culturally specific narratives, ensuring that generalisations do not come at the cost of cultural accuracy or integrity. Together, these reflections present a nuanced optimism—not based on blind trust in technology, but on the belief that, with ethical oversight, community engagement, and education, GenAI can evolve into a tool that supports rather than undermines cultural understanding.

Limitations

This study was conducted using a collaborative autoethnography approach with a small group of Australian First Nations and non-Indigenous academics, which means that the findings are context-specific and not intended to be generalisable. While this approach offers depth and cultural insight, it does not capture the diversity of Australian First Nations' experiences or perspectives on AI.

The GenAI tools used (ChatGPT, CoPilot, Gemini and Grammarly) represent a specific moment in time. Their capabilities and their models continue to evolve, which may impact future outputs and representations. The study also focused primarily on English-language GenAI outputs which may have limited its ability to capture the full cultural and linguistic richness of Australian First Nations' perspectives.

Despite these limitations, the study contributes to the discourse on AI ethics and Australian First Nations representation.

Future research

Building on this study, future research should prioritise gathering a wider range of Australian First Nations academics' perspectives to offer richer insights into specific concerns in higher education, ethical priorities and strategies for digital engagement. Additionally, research should focus on the co-development of culturally relevant digital literacy programmes. These programmes should not only address technical skills and understanding, but also promote critical thinking about GenAI's cultural impacts, ethical use and potential for misrepresentation.

Conclusion

This study revealed the limitations and risks of current GenAI systems in representing Australian First Nations' perspectives. While some of the tools demonstrated potential for respectful engagement, the broader trend was one of oversimplification, cultural generalisation and a reliance on information from dominant non-Indigenous knowledge systems. The reflections of the research team were central to identifying these issues. Addressing these challenges requires not only more inclusive training data and GenAI design, but also the expansion of digital literacy education that foregrounds critical and culturally responsive practices. This study contributes to a growing conversation about Indigenous data sovereignty, AI ethics and the future of education in a world impacted by AI.

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