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Special Issue:
Teaching Geography for a World in Transition - Powerful Teaching in Uncertain Times

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Short Communication: Geographic Insight in Brief

Between Pedagogy and Privacy: Developing Geography Students' Qualitative Research Skills in the Context of Generative AI

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Abstract: This short paper reflects on teaching qualitative methods to undergraduate students at a time when Generative AI is transforming higher education. We report on our experiences of teaching a skills-focused geography subject which implements an applied research project that undergoes full ethics assessment. Our recent experiences highlight the need for geography educators to make deliberate pedagogical choices that uphold research ethics and integrity when student work involves real participant data. We argue that experiential learning opportunities must be preserved in geography classrooms, however, educators must proactively manage ethical obligations and safeguard research participants' data from insecure Generative AI platforms.

Keywords: Generative AI; qualitative methods; research training; students; data protection

Highlights:

- Hands-on research methods training is critical to geography students' skills development.
- Generative AI must be navigated proactively in research subjects involving human participants.
- Geography educators who use qualitative data with students must protect participants' privacy.
- Use of Generative AI for data analysis requires greater discussion in geography journals.

1. Introduction

The stakes feel high. Each year we teach a class of 100 undergraduate students to collect, analyse and report on interview data as part of a third-year qualitative research methods subject. Collectively, subject staff and students explore a complex social geographical issue through student-led interviews. Together, we have investigated young adults' attitudes towards mixed-race relationships (in 2022) and offshore wind development (2023, 2024); and most recently young people's experiences of a housing affordability crisis (2025). We engage with significant local issues in the region where our university is located and communicate our research findings to external organisations, thereby showing students the value of qualitative research outside the classroom. This rich, qualitative work is unfolding at the same time as Generative AI is altering higher education. Any researcher who has faced a hefty pile of interview transcripts knows that data coding and analysis are time-consuming, sometimes overwhelming – but hugely important – tasks. Interview transcripts can now be analysed entirely by Generative AI, which will identify themes, apply coding frameworks, and generate discussion with supporting quotes, replicating the core analytical labour of qualitative research. The temptation to outsource this work to Generative AI is high for our undergraduate student cohort, who routinely juggle competing demands including the paid employment commitments that sustain

them. These structural pressures make time-saving tools attractive, even when students understand the ethical implications of uploading participant data to insecure Generative AI platforms.

This Special Issue explores geography teaching in a world in transition. As Generative AI introduces significant uncertainty into higher education, we ask: is there still a place for hands-on research training with undergraduate geography students? Or has Generative AI killed our capacity to bring students into these powerful learning opportunities? Here, we process this ethical dilemma in conversation with literature on the importance of field skills training in undergraduate geography curricula, and recent debates on Generative AI and data analysis. We argue that geographical education must retain opportunities for scaffolded primary research training, and that geography teachers who lead these activities have an obligation to safeguard participants' privacy.

2. Empowering students through experiential learning

Geographers have long argued that fieldwork, experiential learning, and problem-based teaching experiences are critical to the discipline's success and to cultivating key graduate capabilities (DeLyser et al. 2013; Fraile-Jurado and Periáñez-Cuevas 2023; Leininger-Frezal 2018; Lloyd et al. 2015, Martin 2009; Spronken-Smith 2005; Wilson et al. 2017). Teaching qualitative research methods experientially empowers geography students to develop skills to investigate, comprehend and intervene in complex social and environmental issues. These skills cannot be developed through lectures and readings alone – opportunities to *do the work* of qualitative research are essential (Martin 2009; DeLyser et al. 2013). Conducting original research supports students to gain confidence and learn deeply because it 'concretises abstract principles' (Keenan and Fontaine 2012:226; Martin 2009). Moreover, direct experience of interviewing, coding and analysis in courses that engage with topical problems helps students to see the relevance and application of geographical research (Spronken-Smith 2005:207; Martin 2009). Learning in this way can showcase the power of geographical research as a mechanism for deepening insights, understanding context, elevating marginalised voices (including those of young people themselves), and contributing to change.

3. Introducing GEOG336: Qualitative research design for humanities and social sciences

GEOG336 is a project-based qualitative research methods subject taught at the University of Wollongong. The subject introduces students to qualitative research, provides direct experience of designing and implementing a qualitative research project, and encourages critical reflection on the strengths and weaknesses of qualitative methods (DeLyser et al. 2013; Martin 2009). Natascha has coordinated the subject since 2022, Chantel and Laura were tutors in 2025. Each year, we obtain human research ethics approval for GEOG336 prior to the teaching semester. All students are required to complete the university's ethics training module and are formally added as project investigators. Subject lectures discuss qualitative research epistemologies, research design, ethics, designing semi-structured interview questions, positionality and reflexivity, fieldwork practices (recruitment, consent, safety), qualitative data management, analytical approaches and theoretical frameworks. In several three-hour workshops tutors support students to practise skills associated with these topics. Like Martin (2009:409) we try to 'balance social theories of knowledge ('epistemologies') with specific, nuts-and-bolts prescriptions for collecting and analysing data ('methods')'.

Each student is tasked with recruiting and interviewing one young adult participant (aged 18-30) who is resident in the local area but not enrolled in GEOG336. The student researchers use the same interview guide, participant information sheet and consent form (see Appendix 1 and 2 for 2025 versions). Prior to conducting their interview, students practise peer interviewing in class and complete a pilot interview. Subject assessments include: i) a research proposal incorporating a researcher positionality statement; ii) a compilation of research data including a de-identified interview transcript, audio-recording and participant consent form; and iii) a final report. It has been our practice to upload the de-identified interview transcripts prepared by students to the subject's secure online learning platform, from which each student selects ten transcripts to analyse for their final report. We teach students about thematic, narrative and discourse analysis techniques, and inductive versus deductive coding approaches. During workshops, they practise coding sections of interview text and are shown how lower-level codes can be aggregated into parent codes, and ultimately into research findings (DeLyser et al. 2013; Martin 2009). This data analysis component of GEOG336 has become an ethical flashpoint due to Generative AI.

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4. Balancing experiential learning and Generative AI

More than two decades ago, Welch and Panelli (2003:256) observed that research methods subjects are 'logistical nightmares' to deliver. There are many logistical nightmares we could reflect on regarding GEOG336. Here, however, our focus is on the interface between research methods training and Generative AI. While GEOG336 uses interviews, the issues we identify are equally applicable to other qualitative methods and data.

Over the four years that Natascha has coordinated GEOG336, Generative AI has emerged as an issue requiring attention. Like many universities, ours cautions that researchers must not upload sensitive data to AI, 'unless the AI tool is secure and private'[1] and that human research data 'must not be provided to third party Generative AI tools (e.g. ChatGPT)[2]. This information is shared with GEOG336 students during lectures and workshops and via assessment instructions (Figure 1). Students are required to submit a written declaration with their final report, either confirming that they have not used Generative AI, or outlining how it has been used appropriately.

While marking one student's final report in 2025, Natascha noticed participant quotes that sounded 'off'. They didn't *feel* like sentences that young adult interviewees would use. To investigate, she uploaded all students' de-identified interview transcripts to NVivo and conducted a word search. The search revealed that the quotes used in this assignment did not exist in the dataset. Natascha subsequently checked several participant quotes in every student assignment to uncover further instances of apparent data fabrication. What was more alarming was that some assignments included quotes that amalgamated ideas and phrases from multiple transcripts to produce hallucinated hybrids. It appeared clear that some students had uploaded interview transcripts to Generative AI to produce quotes, themes and findings for their final reports – thereby undermining ethical commitments made to research participants. The identified cases were formally investigated through our university's academic misconduct and research ethics and integrity units. Natascha requested the involvement of *both* units because the case raised issues of student cheating (academic misconduct) *and* participant privacy and data fabrication (research ethics and integrity). The outcomes for the individual students involved are private matters. However, as a teaching team we concluded: when working with a sizeable student cohort, it is impossible to ensure they will all stay within Generative AI guardrails provided in assignment instructions.

Our concerns reflect those raised in a rapidly growing body of literature discussing the role of Generative AI in data analysis, particularly qualitative data analysis. Some scholars have lauded Generative AI's capacity to save time and labour, identify complex patterns and themes in large datasets, generate ideas, support consistency and reduce human error (Butson and Spronken-Smith 2024; Caton and Hwang 2025; Fang and Essien 2025, Mabirizi et al. 2025; Qiao et al. 2024; Sehemi et al. 2025). Nonetheless, many argue that human insight remains critical for qualitative data analysis, and that Generative AI should only be used to complement human analysis (Combrinck 2024; Cook et al. 2025; Fang and Essien 2025; Gustavsen et al. 2025; Wachinger et al. 2025) particularly due to human ability to contextualise research data – a priority for geographers. Concerns about using Generative AI for data analysis include bias and stereotyping; decontextualisation; inability to interpret nuance; a focus on patterns while overlooking important outliers; data fabrication, hallucination and misinformation; intellectual property rights; transparency and authorship attribution; reduced data familiarity and capacity for meaning-making; inequity in accessing Generative AI; diminished critical thinking, academic integrity and standards; and data privacy, data ownership and participant consent[3] (Alqahtani and Wafula 2025; Burleigh and Wilson 2024; Butson and Spronken-Smith 2024; Caton and Hwang 2025; Christou 2023; Cook et al. 2025; Davison et al. 2024; Dhou and Orudzheva 2025; Friedman et al. 2025; Mabirizi et al. 2025; Paulus et al. 2025; Prescott et al. 2024; Pretorious and Pretorious 2025; Qiao et al. 2024; Sehemi et al. 2025; Smith et al. 2025; Wachinger et al. 2025; Wilson 2025; Zhou and Al-Samarraie 2025).

Our primary focus here is on data protection and privacy. As Butson and Spronken-Smith (2024:565) observe:

> *AI's voracious appetite for data is well-known, but the ethical dimensions surrounding data handling are often glossed over. This creates a dilemma for researchers, who must grapple with the tension between leveraging AI's capabilities and ensuring data privacy.*

1. https://www.uow.edu.au/research/graduate-research/current-students/generative-ai-in-hdr/ (Accessed 22.04.26)
2. https://www.uow.edu.au/research/researcher-support/ethics/integrity/#d.en.320780 (Accessed 22.04.26)
3. The extensive list of references included here offers a resource for geographers who want to engage with these discussions.

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Recently, 416 qualitative researchers from 38 countries called for Generative AI to be rejected entirely in reflexive qualitative research (Jowsey et al. 2025). Other scholars are calling for clear institutional guidance on research uses of Generative AI to ensure compliance with privacy legislation and ethical frameworks, and for transparency with research participants about how their data will be exposed to Generative AI (Pretorious and Pretorious 2025). Many are cautioning researchers to intimately understand the Generative AI tools that they use, ensure privacy settings are switched on (while noting these are constantly changing), and refrain from uploading sensitive and identifiable data to Generative AI (Burleigh and Wilson 2024; Combrinck 2024; Davison et al. 2024; Qiao et al. 2024; Cook et al. 2025; Fang and Essien 2025; Smith et al. 2025; Wachinger et al. 2025; Zhou and Al-Samarraie 2025). There are important questions to be asked about whether interview transcripts can ever be fully de-identified given the life details they contain and the computation abilities of Generative AI (Pillai and Matus 2025). Such privacy concerns take on added dimensions when working with qualitative geographical datasets, in which participants often discuss place-based issues and describe locations that could make them identifiable.

Statement on use of Generative AI (GenAI) in this assignment

The use of GenAI tools in this assessment is permitted ONLY as indicated in these instructions. While it is permitted, it is not compulsory to use GenAI tools.

Use permitted with acknowledgement	**GenAI can be used in this assessment for the processes identified below.** • Idea generation and brainstorming; • Checking for grammatical errors, punctuation mistakes, and other language-related issues; • Editing assistance for specific sentences or phrases ('what's another word for…?'); • Sourcing relevant peer reviewed academic literature (the literature that is sourced needs to be verified, as there are often inaccuracies in GenAI outputs and some GenAI tools hallucinate non-existent studies. Only some GenAI tools can find academic literature e.g. Copilot). **This use must be informed, purposeful, responsible and transparent.**
Use not permitted	**The following uses of GenAI are not permitted to ensure the effectiveness and validity of your learning and the safety of participants' data in this assessment:** • Generating a first draft, generating assessment responses; • Revisions and extensive editing – for example, refining style and tone of your text ('rewrite this in an academic style') or translating your work ('rewrite this in English'); • Drafting summaries of information (e.g. 'write a summary of this paper); • Analysing interview transcripts. **DO NOT input any interview transcripts, participant quotes or any other data collected from participants into GenAI tools** as it will not be protected. According to UOW Research Integrity guidelines on GenAI, it is NOT permissible to provide data from research with human participants to third party GenAI tools. **Using a GenAI tool in these ways is considered a breach of the Academic Integrity policy.**
If you want to use, or have used, a GenAI tool in a way that is not identified here, please contact the subject co-ordinator before submitting your assessment.	

To ensure equitable access, you are only permitted to use **free** GenAI tools including but not limited to: Copilot; ChatGPT 3.5 (free version), Consensus. Keep in mind ethical, data and privacy considerations, and that different tools may be more suited to different tasks.

It is important to understand that information generated by GenAI tools may be unreliable, inaccurate or incorrect. You must comply with the conditions outlined in this assessment description and ensure that any use of GenAI is ethical and responsible. You also need to critically evaluate and verify the information generated by the tools and not rely on them blindly.

If you choose to use GenAI tools, you must declare this on the title page, provide proper in-text citation and referencing, and include information on the tool/s, prompts used and output in the Appendix. Further information on use of GenAI is provided throughout these assignment instructions. Please ensure you read all sections.

*****Any use of GenAI tools that violates the assessment conditions will be treated as academic misconduct, according to the Academic Integrity Policy.***

Figure 1. Instructions on Generative AI use provided for the final report in GEOG336 in 2025.

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While geographers are certainly using Generative AI in their research (Oğlakcı and Uzun 2025), conversations about its benefits and risks as a data analysis tool are scant in our discipline. A Scopus and Web of Science[4] review revealed no geography papers discussing the ethics of using Generative AI to analyse human research data – though some work on integrating Generative AI into analysis of public datasets, environmental data (Lane 2025, Lee et al. 2025, Lee 2026, Liu et al. 2025) and spatial data workflows was located (Hochmair et al. 2025, Paweloszek 2025, Sabbata et al.2023, Shingleton and Basiri 2025, Vohra et al. 2025). Our discipline urgently needs to engage with – and provide a geographical perspective on – these issues.

5. What's next for GEOG336?

The recommendations for safeguarding participants' privacy presented in the abovementioned literature are extremely difficult to enact when working with a large group of inexperienced student researchers, as we do in GEOG336. While more secure Generative AI platforms exist – with greater potential to protect participant privacy – there is no way for us to ensure that students will limit their use to just those. We are left with a conundrum: teaching qualitative research methods via hands-on practice with real data is highly beneficial for student learning, but can it still be done ethically?

As a result of our experiences with GEOG336 in 2025, and our reading of this growing body of scholarship, we are fundamentally restructuring students' opportunities to engage with the collated dataset in our 2026 subject delivery. Our practice of uploading de-identified interview transcripts to the subject's online learning platform will stop. Instead, subject staff will identify up to 20 high-quality de-identified interview transcripts from the dataset. These will be printed and made available for manual, paper-based coding in small groups during two separate three-hour workshops. During this time, students will be asked to document quotes that they want to use in their final reports but will not be permitted to retain the transcripts after they leave the classroom. The possibility remains that some students will upload their extracted quotes to Generative AI to write their final reports, and we will retain the warnings and signed declarations that are already part of our assignment instructions (Figure 1). Nonetheless, by adopting this approach we can ensure that – at worst – only small sections of interview text are uploaded to insecure Generative AI platforms by students who engage in academic misconduct, rather than entire transcripts. This is a risk containment strategy, but it also brings pedagogical benefits by ensuring students are required to engage with data coding as an experiential process. We are energised by DeLyser et al.'s (2013:18) reflections on how participating in the embodied labour of coding and analysing data leads to 'revelations', causing students to see things differently – particularly when 'entirely unexpected themes emerge'. Moreover, there is widespread agreement that humans must retain central oversight of qualitative data analysis, even if/when Generative AI is used (Combrinck 2024; Cook et al. 2025; Gustavsen et al. 2025; Wachinger et al. 2025). Geography educators must ensure that geography graduates learn qualitative data analysis skills in the first place, or they will not be capable of providing the oversight that Generative AI requires.

6. Closing remarks

We opened this paper with a provocation: is there still a place for hands-on research training with undergraduate geography students? We remain advocates of experiential-learning approaches like those used in GEOG336, which expose students to the *doing* of qualitative geography. At this point, we are not willing to let go of the learning, skills development, and impact opportunities afforded by GEOG336, and so the critical work of refining the subject in the context of Generative AI will go on. Our response to the challenges we face in GEOG336 is just one strategy for meeting our ethical and pedagogical obligations in this rapidly changing environment. The paper-based approach we have adopted in 2026 is a stop gap – an emergency brake of sorts – but it is unlikely to stand the test of time as Generative AI becomes even more entrenched in everyday academic practice. We look forward to learning from other geography researchers and educators who are grappling with similar issues, and who may develop more tech-forward[5], yet ethically sound, strategies.

4. Searches were conducted on 20.02.26 using the terms: geography AND "Generative AI" AND "data analysis". These yielded no relevant articles.

5. Promising options, that would require university support, include installing lockdown browsers in computer labs that would allow students to practise Generative AI supported data analysis using only approved platforms, with appropriate privacy settings in place.

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To conclude, we are not advocating for or against the use of Generative AI for qualitative data analysis in general, and there are differences in comfort levels with Generative AI within our authorship team. Rather, we contend that there are serious ethical and privacy issues to confront when researchers use Generative AI for analysis, and these take on particularly challenging dimensions when carried into geography classrooms. Geography academics who conduct qualitative research projects with their students – or who grant students access to existing qualitative datasets for analysis – must therefore be alert, informed and make careful design choices to meet abiding ethical commitments to research participants. The literature we have reviewed in this paper provides an entry point for this critical engagement.

Extending beyond our reflective intervention, empirical research that explores academics and students' perspectives and practices relating to Generative AI use for data analysis is needed, with a particular focus on rich and contextualised qualitative geography datasets. These issues require urgent attention and discussion within geography journals and classrooms. As a discipline, we must engage more fulsomely with debates that are advancing quickly in other fields. Finally, it is problematic that universities often separate their management of academic integrity (students cheating) and research integrity (participant privacy and data reliability). Maintaining this separation in the context of Generative AI creates unacceptable risks because this technology causes academic integrity and research integrity to collide in new ways. As a discipline that prides itself on experiential research methods training, geographers must also advocate for university-level Generative AI policies, guidelines and infrastructures that meet the needs of subjects like GEOG336, so that we can safely continue to bring students into impactful learning opportunities via contact with real participant data.

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Supplementary Materials: Consent Form & Participant Information Sheet for interviews is available online here.

Contribution to the Special Issue Topics: This paper contributes to the Special Issue themes by exploring: 'The transformative potential and limitations of digital tools and AI in geography teaching' and 'Teacher agency and curriculum decision-making in times of uncertainty'.

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