

The Ethics of Using Artificial Intelligence in Qualitative Research

David T. Marshall^{1a} and David B. Naff^{2a}

¹ Auburn University ² Virginia Commonwealth University

Author Note

David T. Marshall  <https://orcid.org/0000-0003-1467-7656>

David B. Naff  <https://orcid.org/0000-0002-8381-4493>

^a Authors contributed equally to this paper.

There are no conflicts to report. There is no funding that is associated with this work.

Corresponding author: David T. Marshall, Auburn University, 4036 Haley Center, Auburn, AL 36849, USA.

Abstract

Artificial Intelligence (AI) and other large language models are rapidly infiltrating the world of education and educational research. While these new technological developments raise questions about use and ethics throughout the world of educational research, this is perhaps particularly the case for qualitative methods given the philosophical and structural foundations of its various associated designs. This paper seeks to interrogate the perceived ethics around the use of AI in qualitative research, from the transcription and analysis of data through the drafting of findings. We draw on survey data from qualitative researchers (n=101) collected from April-May 2023. Findings indicate that researchers were more apt to embrace the use of AI for transcription purposes, and to a lesser extent for preliminary coding. Similarly, participants indicated that the use of AI for these purposes would not deter them from recommending the acceptance of a journal article. However, participants were not as accepting of using AI for all coding, generating findings, or for writing journal manuscripts. With the exception of transcription, researchers from R1 universities were less accepting of AI's use in the research process than researchers from other institutions. Participants identified time savings as the greatest benefit of using AI in their work, but also shared their concern about the loss of the human element in qualitative research. We conclude with implications for using AI in qualitative research.

Key words: qualitative research; AI; artificial intelligence; ethics

The Ethics of Using Artificial Intelligence in Qualitative Research

Artificial Intelligence (AI) and other large language models are rapidly infiltrating the world of education and educational research (Senechal et al., 2023). This includes the integration of AI into analytical tools to help expedite the process of data preparation, analysis, and reporting. ATLAS.ti, a prominent analysis tool for coding qualitative data, announced in the spring of 2023 that it was launching a beta version of AI within its software, offering a resource for analyzing text much more rapidly than typically occurs in qualitative research. Although ATLAS.ti is the first to the market with this new technology for qualitative analysis, this undoubtedly marks an inflection point from which other software programs will soon follow suit, and AI has already been integrated into other resources associated with qualitative methods, such as online transcription services. Furthermore, AI platforms have already been used to contribute to research manuscripts, sometimes even being cited as a co-author (Akabayashi et al., 2022). While these new technological developments raise questions about use and ethics throughout the world of educational research, this is perhaps particularly the case for qualitative methods given the philosophical and structural foundations of its various associated designs. This paper seeks to interrogate the perceived ethics around the use of AI in qualitative research, from the transcription and analysis of data through the drafting of findings. We also explore how qualitative researchers currently view the use of AI in the research process.

AI is a decades-old technological field intended to create computer programs that are capable of engaging in tasks that would normally need to be accomplished through human cognition, including creativity, problem solving, and critical thinking (McCarthy, 2007). This intended purpose begs the question of the degree to which human creativity, problem solving, and critical thinking

prove integral to the work of qualitative research, as the integration of AI into the field also inevitably means reduction of the human contributions within the infrastructure of this method. Anis and French (2023) advocated that qualitative researchers should embrace AI, noting that it can be efficient, work within the structure of researchers' established coding structures, and potentially address equity issues related to access to research resources in academia. They also cautioned that qualitative researchers should be cautious to not have their roles replaced by the new technology, and that it can potentially contain societal biases that undermine its applicability with diverse audiences. While these points may have merit, they only scratch the surface of the potential ethical considerations that qualitative researchers should attend to when using AI in their work.

Foundationally, qualitative research is intended to be constructivist (focused on individual constructions of reality; Bochner, 2017) and constructionist (focused on societal or collective constructions of reality; Lee, 2012). Epistemologically, this means that there is not necessarily a central "truth" to be found within qualitative data, consistent with its intention to produce transferable rather than generalizable results (Maxwell, 2013). Instead, the findings offer "relational validity," meaning that they ring true with the participants in the research by accurately and sufficiently honoring their voices and perspectives (Tuck & McKenzie, 2015). This is accomplished through careful attendance to the threats of participant reactivity and researcher bias (Maxwell, 2013) while employing robust methods for establishing trustworthiness like collecting rich data, member checking, prolonged engagement, highlighting negative cases, peer coding and debriefing, triangulation, and memoing (Guba 1981; Tracy, 2010), among others. These processes take time, often requiring qualitative researchers to code and recode data (Shufutinsky, 2020), and even reconsider research questions and

conceptual frameworks in response to emergent themes to ensure that the final report sufficiently captures and honors the lived experiences of research participants (Wilson & Anagnostopoulos, 2021).

While AI offers a clear opportunity for expediting these processes, it is important to consider the degree to which that is a desirable outcome within the field of qualitative inquiry given the purposefully meticulous and generative nature of the work. This surfaces a number of ethical questions that one must consider when engaging in qualitative research and determining whether to incorporate this new and powerful technology.

Transcription

Verbatim transcription of recorded qualitative interview data is often a painstaking process. However, for qualitative researchers who transcribe their own interviews it presents a first opportunity for gaining familiarity with the data and engaging in an informal round of analysis before coding formally begins (Maxwell, 2013). Transcription has largely become either automated through the advancement of technologies that produce text from audio and video files with increasing levels of accuracy or paid services whereby another person outside of the research team manually generates a transcript. Thus, the question of whether automated transcription removes the opportunity for early engagement with qualitative data was already present prior to the incorporation of AI into qualitative coding software. Similarly, there is an ethical question of whether it is appropriate to feed raw audio and video data, which is typically not de-identified, into automated transcription programs as this may not be explicitly addressed in participant consent documents outlining how their data will be protected. AI functions through the processing of large amounts of data (Gröger, 2021), and therefore it is a meaningful consideration about how appropriate it is for raw interview responses that

participants expect to be protected to be fed into a system that will actively use it for future transcriptions and other AI-generated products and resources.

Data Collection

Although AI is not necessarily being actively used in the collection of qualitative data, there has been a rapid increase in the interaction between humans and AI systems (e.g. chatbots) in recent years (Ashfaque, 2022). While this often occurs in customer service or troubleshooting capacities, the data provided by humans engaging in those interactions nevertheless contributes to future AI-generated conversations and one could see how qualitative data collection could similarly occur through interviews conducted without a human asking the questions. Research shows that generating rich response data through qualitative interviews is an active process (Fernqvist, 2010) whereby the qualitative researcher uses a protocol (often semi-structured) but also engages in thoughtful conversation with the participant, offering follow up probes and requesting elaboration on points of particular interest. Should qualitative inquiry move in the direction of AI collected interview data, even with advancements within the technology, the demonstrated benefits of active interviewing may be undermined, and the richness of the data may therefore be diminished. Furthermore, the ethical question persists of how participants expect their data (audio and written) to be used and protected. Finally, it is possible to conceive of a dynamic within qualitative research wherein AI produces responses to interview questions in place of a human, consistent with the capacity of programs like ChatGPT to generate original and creative content in response to human inquiry.

Data Analysis

Ethical considerations within qualitative data analysis directly relate to the recent integration of AI within prominent coding programs like ATLAS.ti. Foundationally, there is a potential concern related to how analyses generated by AI might be viewed as the “correct” interpretation of data. Considering the constructivist and constructionist nature of qualitative inquiry, it is arguably inappropriate to pursue a signal from the data that may be considered conclusive, akin to a quantitative output generated from a statistical software that does not require human calculation to produce findings. Qualitative research often involves the coordination and calibration of multiple researchers interacting with the same rich data, weighing the responses against existing conceptual frameworks or inductively generating new themes and theories from the perspectives of participants (Lincoln & Guba, 1989). The qualitative researcher is also the primary tool in data collection and analysis, and while this may be “messy” and introduce higher potential for bias or error, it also offers the possibility of nuanced interpretation that may be difficult to attain using AI.

Furthermore, the ethical concern about the sharing of data persists in its analysis using AI technologies that are likely to integrate it into its own learning and development. While this perhaps improves the effectiveness of the technology for subsequent coding tasks, it once again may use response data in ways not anticipated by participants. This would require updating consent language to address the possibility (or even likelihood) of sharing data with AI systems used in analysis. Finally, research shows that the large amounts of data mined by AI systems tends to disproportionately represent the perspectives and experiences of White and middle to high-socioeconomic status individuals (Lee et al., 2019). This presents a clear concern for AI-generated qualitative data analysis to

be culturally misaligned with participants from minoritized, marginalized, and underrepresented backgrounds, which is particularly dangerous if AI qualitative analyses begin to be interpreted as “truth.”

Reporting and Authorship

AI can be an invaluable resource for answering complicated questions and generating ideas that may be of use to its users. At the same time, the rapid emergence of AI systems like ChatGPT has raised concerns about the potential (even likelihood) of computer-generated content intended to be produced by humans such as essays or other assignments in K-12 and higher education settings (Yeadon et al., 2023). While there are online services for checking what is intended to be original content against existing written work to detect plagiarism, AI models typically generate original content that undermines the ability of these systems to detect when they have been used as a substitute for human writing (Elali & Rachid, 2023). Furthermore, the newness of this technology raises the question of whether its use is actually plagiaristic or not, and while companion technologies are emerging for detecting when written content was produced by a human or AI, their accuracy is inconsistent and may not always keep up with the constantly changing AI systems themselves (Gao et al., 2022).

This directly relates to ethical questions around the use of AI for authorship of qualitative research reports. For example, it is necessary to consider whether interpretations of findings generated through AI-powered analysis tools like ATLAS.ti or content generation like ChatGPT would be considered as information generated by the authors of the manuscript. Furthermore, even if the use of AI systems are clearly identified in methods sections or if they are listed as co-authors on reports, there

is a persistent question of whether the findings and interpretations that are generated are consistent with the intent of qualitative inquiry to offer relationally valid accounts of the lived experiences of participants. Readers accessing qualitative reports who expect the robust accounting of complex stories through meticulous methods used for generations within the field may find themselves misguided by authorship that relies on AI technologies.

While it is important to not be resistant to technological advancements that could offer meaningful improvements in qualitative research, it is also important to not endorse them wholesale without wrestling with what they might mean for the field. Some of these questions could potentially be addressed through ongoing improvements in the technology, while others may endure.

Current Study

With the advent of AI technologies like ATLAS.ti's AI Coding feature, we were interested in understanding how qualitative researchers viewed the use of AI in their research endeavors. We were guided by the following questions:

1. To what extent are qualitative researchers willing to use AI in research endeavors?
2. To what extent would qualitative researchers indicate they would be willing to recommend acceptance of a manuscript submitted to a journal that used AI in research endeavors?
 - a. Do differences exist in how qualitative researchers view different research tasks?
 - b. Do faculty and graduate students at R1 universities view this different from those at other institutions?
3. To what extent do qualitative researchers believe using AI in research endeavors is ethical?
 - a. Do differences exist in how qualitative researchers view different research tasks?

- b. Do faculty and graduate students at R1 universities view this different from those at other institutions?

To answer our questions, we administered a mostly descriptive survey using convenience and snowball sampling from April 12 to May 6, 2023. In order to be eligible to participate, individuals had to be currently employed as college or university faculty, retired college or university faculty, current graduate students, or employed in a postdoctoral fellowship. IRB approval was obtained prior to the start of research activities. The survey was administered via Qualtrics and an anonymous link to the survey was distributed to personal networks, posted on social media sites including Twitter and Reddit, and distributed to researchers with whom we interacted at the 2023 American Educational Research Association's Annual Meeting in Chicago, Illinois. Those who participated were eligible to enter in a raffle for one of ten \$10 Amazon gift cards. It is worth noting that there were two administrations of this survey. The first administration of the survey was one day prior to this administration (April 11, 2023). Proper online security features were not in place during the first administration of the survey (e.g., Recaptcha). As such (and ironically), a plethora of AI bots completed the survey. The data were discarded and additional security features were added prior to the second administration of the survey. What we describe here is from the survey's second administration.

Participants

A total of 101 participants completed the survey. A majority of participants' field of study was education (n=51). An additional 18 participants identified their field of study as being in the social sciences (e.g., psychology). The remainder had backgrounds in health and medicine, STEM fields,

social work, business, the arts and humanities, and law. A plurality indicated that they engage in both quantitative and qualitative research (n=46), while an additional 28 engaged in mostly qualitative research, and another 13 exclusively conducted qualitative research. A majority of participants worked at a public university (n=60).

Instrumentation

The survey included four banks of items, each asking participants about their perspectives of using AI for: (1) transcribing qualitative data; (2) using AI for preliminary coding; (3) using AI for all coding; (4) using AI to generate findings and emerging themes; and (5) using AI to write their manuscript. Three of the four banks of items asked participants: (1) whether they would engage in using AI for these tasks; (2) the extent to which they would agree with someone else using AI; and (3) how ethical they viewed using AI in qualitative research. Each of these items used a six-point Likert scale where a value of 1 indicated strong disagreement and a value of 6 indicated strong agreement. A fourth bank of items asked participants how likely they were to recommend the acceptance of a manuscript that described using AI in their qualitative research; these items used a seven-point Likert scale where a value of 1 indicated that they were *much less likely to accept*, a value of 7 indicated that they were *much more likely to accept*, and a value of 4 indicated that they were *neither more or less likely to accept* a manuscript for publication. Demographic items asked participants the type of institution at which they were employed (i.e., public, private, R1, etc.), the type of appointment they had (i.e., tenured professor, tenure-track professor, graduate student), and the type of research they typically conducted. The survey instrument had two additional open-ended items which asked participants

what they perceived to be the benefits of using AI in qualitative research, as well as what concerns they had about using AI in their research endeavors.

Data Analysis

Descriptive statistics including means and standard deviations were calculated for each item. A pair of repeated measures ANOVAs were conducted to compare participant views in terms of their (1) likelihood to recommend acceptance for manuscripts that describe using AI in the research process and (2) how ethical they viewed the use of AI in qualitative research. To compare faculty and graduate students from R1 institutions with other participants, independent-samples *t*-tests were conducted. All requisite assumptions were checked and met. All quantitative analyses were conducted using SPSS version 28. Qualitative data obtained from the two open-ended items were analyzed by the first author using ATLAS.ti 23. It should be noted that the AI Coding feature was *not* used for these analyses. Two rounds of open coding ensued, and codes emerged based on the transcripts.

Findings

To answer the research questions, descriptive statistics were calculated for each item. Overall, participants viewed using AI for transcribing qualitative data the most favorably and viewed using the tools to write manuscripts the least favorably. See Table 1 for means and standard deviations for each item.

Table 1.

Qualitative Researcher Perspectives on Using AI in Research

	<u>N</u>	<u>M</u>	<u>SD</u>
<i>Willingness to Engage in this Practice in Their Research^a</i>			
Using AI for Data Transcription	96	4.40	1.49
Using AI for Preliminary Coding	96	3.49	1.39
Using AI for All Coding	95	2.44	1.54
Using AI to Generate Findings	96	2.71	1.56
Using AI to Write their Manuscript	97	2.11	1.55
<i>Likelihood to Recommend Acceptance^b</i>			
Using AI for Data Transcription	95	4.12	1.41
Using AI for Preliminary Coding	95	3.79	1.37
Using AI for All Coding	95	2.73	1.80
Using AI to Generate Findings	94	2.80	1.89
Using AI to Write their Manuscript	94	2.35	1.76
<i>Ethics of the Following Practices^a</i>			
Using AI for Data Transcription	93	4.43	1.17
Using AI for Preliminary Coding	92	3.86	1.05
Using AI for All Coding	92	2.85	1.48
Using AI to Generate Findings	92	2.79	1.67
Using AI to Write their Manuscript	92	2.35	1.61

Note: ^a Six-point Likert scale ^b Seven-point Likert scale

To answer the first sub-question for the second and third research questions, two repeated measures ANOVAs were run to test for differences in how participants viewed using AI: (1) to transcribe data; (2) for preliminary coding; (3) for all coding; (4) to generate findings; and (5) write the manuscript. The first test explored whether differences existed in how likely participants were to recommend acceptance of a journal manuscript that utilized AI for these five research tasks. The assumption of sphericity was violated ($X^2(9 \text{ d.f.})=93.801, p < .001$); therefore a Greenhouse-Geiser correction was applied. Significant differences were found between the means ($F(2.474, 227.648)=47.19, p < .001, \text{partial } \eta^2=.34$). Bonferroni post hoc comparisons indicate that participants viewed using AI for transcription and preliminary analysis similarly; and they were more likely to accept a paper that described research that engaged in these tasks than others. Participants were

significantly less likely to accept a paper that authors acknowledged used AI in the writing process compared to all other research tasks.

A second ANOVA was conducted to explore whether differences existed in how ethical participants viewed using AI for the five research tasks. Again, the assumption of sphericity was violated ($X^2(9 \text{ d.f.})=150.263, p < .001$); therefore a Greenhouse-Geiser correction was applied. Significant differences were found between the means ($F(1.987, 180.791)=47.67, p < .001$, partial $\eta^2=.34$). Bonferroni post hoc comparisons indicate that participants viewed using AI for transcription purposes to be significantly more ethical than using AI for other tasks. Participants indicated that using AI for preliminary coding was significantly more ethical than doing so for all coding or for generating findings. Participants indicated that using AI for writing the manuscript was significantly less ethical than any of the other four tasks.

Differences in Perspectives by Institution Type

To answer the second sub-question for the second and third research questions, independent samples *t*-tests were conducted to compare the views of participants at R1 universities with those of participants at other institutions in terms of how they viewed using AI across five tasks including using AI: (1) to transcribe data; (2) for preliminary coding; (3) for all coding; (4) to generate findings; and (5) write the manuscript. Overall, participants at R1 institutions were significantly less likely to recommend the acceptance of journal manuscripts that described using AI for preliminary coding, all coding, generating findings, or writing the manuscript. No differences existed in terms of how the two groups of participants viewed using AI for transcription purposes. In terms of how participants viewed the ethics of using AI, participants from R1 institutions differed significantly from

participants from other institutions only in terms of how they viewed using AI for all coding. Though not statistically significant, R1 participants viewed using AI to generate findings and write manuscripts less favorably than participants from other institutions. Medium to large effect sizes suggest the possibility of Type II errors. See Table 2 for findings comparing R1 participants with others.

Table 2.
Comparing Views of R1 Faculty/Grad Students vs. Others

		<u>N</u>	<u>M</u>	<u>SD</u>	<u>t</u>	<u>d</u>
<i>Likelihood to Recommend Acceptance^b</i>						
Using AI for Data Transcription	R1	19	4.16	1.21	.145	.04
	Not R1	76	4.11	1.46		
Using AI for Preliminary Coding	R1	19	3.21	.79	2.952**	.54
	Not R1	76	3.93	1.45		
Using AI for All Coding	R1	19	2.00	1.16	2.651*	.51
	Not R1	76	2.91	1.89		
Using AI to Generate Findings	R1	19	1.74	1.24	3.672***	.73
	Not R1	75	3.07	1.94		
Using AI to Write their Manuscript	R1	18	1.56	1.04	3.037**	.57
	Not R1	76	2.54	1.84		
<i>Ethics of the Following Practices^a</i>						
Using AI for Data Transcription	R1	18	4.67	1.19	.959	.25
	Not R1	75	4.37	1.16		
Using AI for Preliminary Coding	R1	18	3.87	1.06	.361	.10
	Not R1	74	3.88	1.06		
Using AI for All Coding	R1	18	2.22	1.11	2.042*	.54
	Not R1	74	3.00	1.52		
Using AI to Generate Findings	R1	18	2.22	1.52	1.629	.43
	Not R1	74	2.93	1.69		
Using AI to Write their Manuscript	R1	18	1.72	1.45	1.995	.49
	Not R1	74	2.50	1.62		

Note: ^a Six-point Likert scale; ^b Seven-point Likert scale; *** $p < .001$ ** $p < .01$ * $p < .05$

Perceived Benefits and Challenges Associated with Using AI

Participants shared a range of benefits and challenges that they associated with using AI in qualitative research. The most commonly identified benefit of using the technology was the time it

could save, especially with tedious tasks like transcription. As a tenured faculty member at a public R1 institution shared, “Assuming that the researcher checks the transcriptions and engages in member-checking, I see some benefits in AI transcribing qualitative data.” In general, participants saw AI as a tool that could help with routine, mundane tasks associated with qualitative data analysis. Participants believed that AI might allow for the analysis of larger datasets, and it might help researchers find patterns in the data that they may miss. One researcher at an R1 university responded, “It could open the door to new types of analysis.” Consistent with the quantitative findings, most participants were not overly keen on using AI for *all* coding; however, many found benefits in using it for preliminary coding. Finally, some participants saw AI as a tool that could potentially help reduce error by consistently applying coding schemas across the data.

Not all participants were enthusiastic about using AI in their research. As one tenured faculty at a public university noted, “The whole idea that AI could engage in qualitative research goes against the entire paradigm as a humanizing, person-centered research methodology.” This was the most listed objection to its use – the removal of the human element from the process. An administrative faculty member at a public university similarly shared, “In qualitative research, the researcher and their subjective experiences provide the lens through which all data is viewed. When you utilize AI, you are losing the important component of human understanding.” Participants shared that it was imperative for researchers to check any work done by AI, whether that was transcription or coding, and not blindly accept that AI was correct in its assessments. A graduate student at an R1 private institution shared, “My primary concern is that qualitative researchers with little training or understanding of AI

as a technology will accept results from AI uncritically and without much-needed validation [and/or] guardrails.” Whereas some viewed AI as having the potential to reduce error, others saw its potential to introduce error. As a tenured professor at a land grant university responded, “AI might have a different point of view or bias than the researcher was intending.” Several participants believed that any textual analysis conducted using AI might be shallow, oversimplified, or lack nuance. Finally, and perhaps most important, some worried that an over-reliance on AI might make for less capable researchers. If those new to the profession always lean on AI for coding, they may never develop the appropriate skills to analyze qualitative data competently themselves.

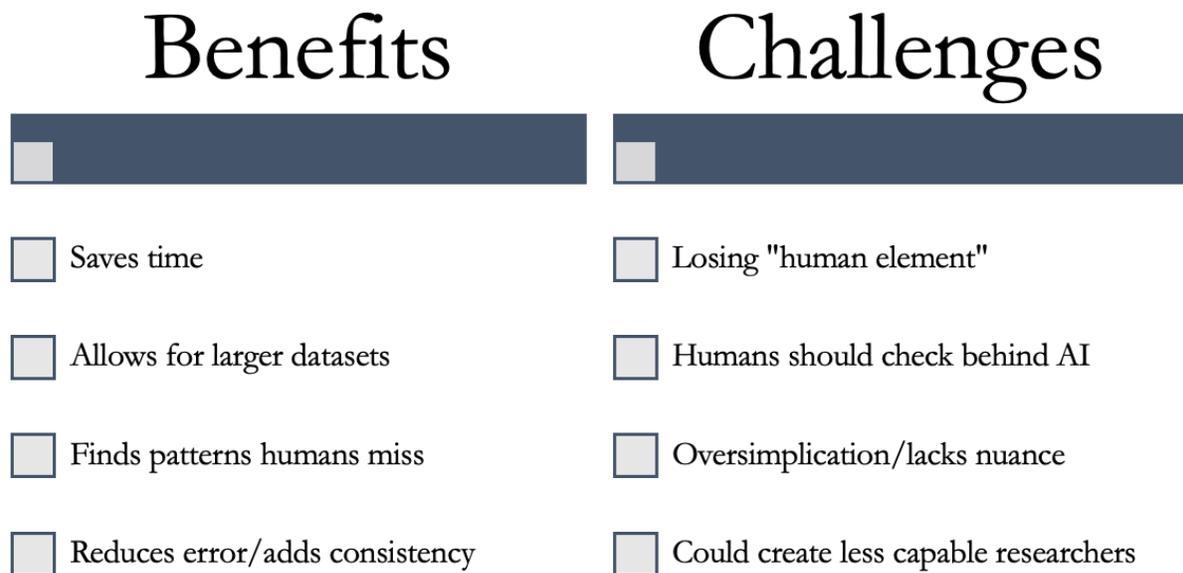


Figure 1. Benefits and Challenges Associated with using AI in Qualitative Research

Discussion

Our survey findings suggest that overall, qualitative researchers have some comfort with using AI – especially for transcription, and to a lesser extent for preliminary analysis. Participants were much less comfortable with researchers using the tools for conducting their entire analysis, generating findings, or writing manuscripts. Researchers at R1 institutions were less comfortable with most of these tasks than those at other types of institutions. Although our participants saw time saving associated with AI's use, they were equally concerned with the removal of the human element from qualitative work.

One issue that arose concerned transparency in describing procedures. Manuscripts describing qualitative research ideally should describe the data analysis process in great detail to add to the trustworthiness of findings (Maxwell, 2013). AI tools that could be used in qualitative research are not going away and are likely to proliferate, and when tools like this exist, some researchers will undoubtedly use them. However, our survey findings suggest that many reviewers – particularly those from R1 institutions who are likely over-represented as reviewers of top-tier journals – will be less likely to accept a paper that describes research that uses AI. This may lead those who use the tools to omit that detail from the description of their research procedures. This is concerning. Journals should include details about reporting AI use in their submission guidelines so authors can understand how to appropriately discuss this in their work.

Implications

Comparing these findings with the initial reflection on ethical considerations surrounding AI in qualitative research illuminates implications and recommendations for thoughtfully and

appropriately integrating this technology. The data appears to reiterate that qualitative researchers consider using AI for transcription is largely ethical, although questions about how the data contributes to future AI language generation endures. While qualitative researchers may choose to move forward with these automated services, it is important to still check the transcript against the audio to ensure its accuracy (particularly while AI in this area is still developing) and to still benefit from the initial “informal” round of analysis that can occur during the transcription phase (Maxwell, 2013).

Data collection using AI was not a focus of the survey, largely because technology automating the collection of interview data is not yet as prominent as it is for transcription and analysis. However, the growth in chatbots in their capacity to interact with human participants indicates that this technology is a possibility, if not an inevitability. When that technology emerges, it will be necessary to offer a deeper exploration into the ethics surrounding AI as a method for conducting interviews with human subjects. If used, it should be explicitly indicated in consent documents as it is not always clear whether someone is interacting with a human or a chatbot in an online conversation (Chaves & Gerosa, 2021). Consent documents should also be explicit about how AI is being used for transcription or analysis of interviews, as participants need to be informed about how their data may end up being used to inform the development of AI algorithms in addition to its use in the study to which they are agreeing to participate. University IRBs should provide template language to this end, if it does not exist already.

The use of AI in data analysis is of imminent consideration given the recent integration of this technology into ATLAS.ti. Survey data suggested that qualitative researchers are somewhat wary of

the ethics around analyzing data using AI, particularly if they come from R1 institutions. This directly relates to the question of how to interpret findings generated by AI systems, as considering them to be the “correct” analysis or “truth” may run counter to the philosophical foundation of qualitative inquiry. Instead, qualitative researchers who choose to use AI for coding may consider it as another member of the team, offering another perspective on how to interpret the data in addition to the human researchers who interact thoughtfully with the data and come to a point of calibration before generating findings. Similarly, AI could provide a new method of establishing trustworthiness as an additional source of triangulation that could highlight themes or patterns that the qualitative researcher had not yet considered.

Finally, survey respondents rated AI-assisted drafting of manuscripts as the least ethical use of the technology in qualitative research, with particular concerns articulated at R1 institutions. This suggests that any use of AI for expediting the work of authors should be considered with particular caution. As this technology evolves there may be an increasing temptation to utilize it as a writing assistant, particularly when attempting to meet pressing deadlines. Research journals evaluating qualitative research (and all research) should offer explicit guidelines on when (if ever) it is appropriate to use AI when authoring manuscripts, and researchers who choose to do so should be transparent in how it specifically contributed to their work. We should note that the present manuscript is entirely the work of the listed authors without the assistance of AI.

Limitations

There are limitations worth noting in this work. First, this study’s sample was voluntary, and as such, it is possible that those who agreed to participate in this work differ in important ways from

those who did not. Additionally, the instrumentation used in this survey was researcher-created rather than adapted from existing, validated items in the literature. This was in response to the relative novelty of AI in qualitative research and the resulting need to create an original survey in response to it, but future research should further work to validate this instrument. There is also a clear opportunity to capture the perspectives of qualitative researchers about the potential use of AI within the field with rich, qualitative data (e.g. interviews) that is not fully captured in the short answer responses of the survey in the present study. Finally, this is also a cross-sectional survey that captures a single point in time. As AI evolves and more individuals engage with these tools, it is possible that how people view these tools will change.

References

- Ashfaque, M. W. (2022). Analysis of different trends in chatbot designing and development: A review. *ECS Transactions*, 107(1), 7215. <https://doi.org/10.1149/10701.7215ecst>
- Akabayashi, A., Nakazawa, E., & Ino, H. (2022). Could artificial intelligence hijack author contributions?. *Nature*, 606(7915), 653-653. <https://doi.org/10.1038/d41586-022-01697-w>
- Anis, S., & French, J. A. (2023). Efficient, explicatory, and equitable: Why qualitative researchers should embrace AI, but cautiously. *Business & Society*, 00076503231163286. <https://doi.org/10.1177/00076503231163286>
- Bochner, A. (2017). Unfurling rigor: On continuity and change in qualitative inquiry. *Qualitative Inquiry*, 24, 359-368. <https://doi.org/10.1177/1077800417727766>
- Chaves, A. P., & Gerosa, M. A. (2021). How should my chatbot interact? A survey on social characteristics in human–chatbot interaction design. *International Journal of Human–Computer Interaction*, 37, 729-758. <https://doi.org/10.1080/10447318.2020.1841438>
- Elali, F. R., & Rachid, L. N. (2023). AI-generated research paper fabrication and plagiarism in the scientific community. *Patterns*, 4(3) 1-4. <https://doi.org/10.1016/j.patter.2023.100706>
- Fernqvist, S. (2010). (Inter) active interviewing in childhood research: On children's identity work in interviews. *The Qualitative Report*, 15, 1309-1327. Retrieved from: <http://www.nova.edu/ssss/QR/QR15-6/fernqvist.pdf>
- Gao, C. A., Howard, F. M., Markov, N. S., Dyer, E. C., Ramesh, S., Luo, Y., & Pearson, A. T. (2022). Comparing scientific abstracts generated by ChatGPT to original abstracts using an artificial intelligence output detector, plagiarism detector, and blinded human reviewers. *bioRxiv*, 2022-12. <https://doi.org/10.1101/2022.12.23.521610>
- Gröger, C. (2021). There is no AI without data. *Communications of the ACM*, 64(11), 98-108. <https://doi.org/10.1145/3448247>

- Guba, E. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communication and Technology Journal*, 29(2), 75-91.
<https://www.jstor.org/stable/30219811>
- Lee, C.G. (2012). Reconsidering constructivism in qualitative research. *Educational Philosophy and Theory*, 44, 403-412. DOI: <https://doi.org/10.1111/j.1469-5812.2010.00720.x>
- Lee, N. T., Resnick, P., & Barton, G. (2019). Algorithmic bias detection and mitigation: Best practices and policies to reduce consumer harms. *Brookings Institute*: Washington, DC, USA, 2.
- Lincoln and Guba, (1989) *What is this Constructivist Paradigm Anyway?*. Fourth Generation Evaluation, Sage.
- Longo, L. (2020). Empowering qualitative research methods in education with artificial intelligence. In *Computer Supported Qualitative Research: New Trends on Qualitative Research (WCQR2019)* 4 (pp. 1-21). Springer International Publishing.
- Maxwell, J. A. (2013). *Qualitative Research Design: An Interactive Approach. 3rd Edition*. Thousand Oaks, CA: Sage.
- McCarthy, J. (2007). What is artificial intelligence. Retrieved from <http://www-formal.stanford.edu/jmc>
- Shufutinsky, A. (2020). Employing use of self for transparency, rigor, trustworthiness, and credibility in qualitative organizational research methods. *OD practitioner*, 52(1), 50-58.
- Tracy, S. (2010). Qualitative quality: Eight “big-tent” criteria for excellent qualitative research. *Qualitative Inquiry*, 16, 837-851. <https://doi.org/10.1177/1077800410383121>
- Tuck, E., & McKenzie, M. (2015). Relational validity and the "where" of inquiry: Place and land in qualitative research. *Qualitative Inquiry*, 21, 633-637.
<https://doi.org/10.1177/1077800414563809>
- Wilson, S. M., & Anagnostopoulos, D. (2021). Methodological guidance paper: The craft of conducting a qualitative review. *Review of Educational Research*, 91, 651-670.
<https://doi.org/10.3102/00346543211012755>

Yeadon, W., Inyang, O. O., Mizouri, A., Peach, A., & Testrow, C. P. (2023). The death of the short-form physics essay in the coming AI revolution. *Physics Education*, *58*(3), 035027.
<https://doi.org/10.1088/1361-6552/acc5cf>