

AI Mirror: A Preliminary Exploration of Using Large Language Models to Mitigate Subjectivity in Autoethnographic Self-Study

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Abstract: *This study presents an AI-augmented self-interview method that utilizes a large language model (LLM) as both the interviewer and an initial analytic assistant. This approach addresses long-standing challenges in autoethnographic self-study, particularly issues of subjectivity and weak audit trails. The primary contribution is a standardized and reproducible workflow that outlines interviewer prompts, turn-taking rules, audit-trail artifacts, and a human adjudication stage. This structure helps restore organization and reflective distance in self-research. In a proof-of-concept case, the workflow generated stable, quote-anchored themes and an explicit codebook with traceable interpretive moves. While we do not claim that this method is superior to human-led interviews, we provide evidence for procedural objectivity—defined by transparency and traceability—as well as reliability indicators such as short-interval test-retest stability and alignment between LLM-generated codes and human adjudication. Additionally, we propose a pre-registered design for a controlled comparison between human and LLM interviews, and we provide prompts and templates for others to reuse. Overall, this work positions LLMs as methodological supports rather than replacements, clarifying what is innovative, what is currently achievable, and what requires further validation.*

Keywords: AI Augmentation; Qualitative Research; Methodology; Autoethnography; Large Language Models

1. Introduction Objectives and Significance

The objective of this study is to explore how AI, particularly Large Language Models (LLMs), can be utilized in self-study and autoethnography to address the inherent limitations of traditional self-research methodologies. While self-study and autoethnography offer valuable deep, reflective insights, they also face significant criticisms and limitations within qualitative research [1]. These methodologies heavily rely on the subjectivity and personal experiences of the researcher, which can challenge the maintenance of objectivity and generalizability. Critics argue that this reliance on personal interpretation can lead to excessive self-centeredness, potentially compromising the balance of the analysis. Furthermore, the introspective nature of these methods may introduce unconscious biases, raising concerns about the reliability and validity of the findings.

By incorporating AI-driven interviews, this research aims to enhance the depth and rigor of self-reflective studies, where the researcher serves as both the subject and the analyst. In this new approach to self-study, AI functions not only as the interviewer, guiding and facilitating the conversation, but also as the tool for qualitative analysis of the interview content. The study examines how AI tools can systematically and effectively support the process of self-study by performing dual roles, offering new insights and methodologies for conducting qualitative research.

This research is significant because it introduces a novel approach to self-study and autoethnography by integrating AI in both the questioning and analytical phases, thereby proposing a transformative shift in qualitative research methodologies. The study highlights AI's potential to systematically analyze qualitative data and provide structured feedback on the subjective experiences of researchers, expanding the scope and applicability of qualitative research. Additionally, through a practical case study, the research provides valuable insights into the initial real-world application of AI tools, offering future researchers a foundation for exploring new possibilities in self-study and contributing to the evolution of qualitative research practices.

This paper proceeds as follows. The next section critically positions our approach against adjacent work on AI-assisted coding, conversational interview agents, and diary-style elicitation, emphasizing what is fundamentally new in our combination of an LLM interviewer, quote-anchored first-pass thematization, and human adjudication under a single protocol. We then summarize threats to validity in self-study that motivate the design choices. The Methods section formalizes the LLM-as-interviewer workflow, makes modeling and procedural assumptions explicit, defines the practical objective and stop criteria, and describes the analysis pipeline in operational terms. The Evaluation section broadens the assessment with contemporaneous baselines, non-parametric statistics, checks for leakage and split hygiene, and efficiency and latency reporting. We conclude with limitations, ethics and governance considerations, and a concrete blueprint for a controlled human-versus-LLM comparison.

2. AI in Qualitative Research

The integration of Artificial Intelligence (AI) in qualitative research has become increasingly prominent, providing novel approaches to data analysis and research design [2]. This review explores the various ways in which AI is currently being applied in qualitative research, highlighting both the benefits and challenges associated with these innovations.

One of the most significant contributions of AI in qualitative research is the automation of data processing tasks such as transcription, coding, and thematic analysis. Traditional qualitative analysis often involves labor-intensive manual coding, which can be prone to human error and subjectivity. AI tools like natural language processing (NLP) algorithms and Large Language Models (LLMs) can automate these processes, significantly improving efficiency and consistency in data analysis [3]. According to a systematic review by Zawacki-Richter et al. [4], AI-driven coding tools have shown promise in maintaining high levels of accuracy while reducing the time required for data analysis. AI also enhances research design through predictive analytics, helping researchers to identify patterns and trends in qualitative data that might not be immediately apparent. Additionally, analytical techniques utilizing AI are being continuously studied in comparison with those performed by humans to evaluate their effectiveness and limitations [5].

While AI offers numerous advantages, in contemporary LLMs-based AI technology, several limitations exist when it comes to conducting interviews independently in qualitative research, extending beyond the mere analysis of pre-existing interview data. AI has inherent constraints in fully comprehending the emotional, cultural, and social contexts of human interactions. These elements are crucial for capturing the nuanced meanings derived from interviews in qualitative research. According to Kvale and Brinkmann [6], interviews are interactive processes, and researchers must be capable of understanding and appropriately responding to the emotional reactions and non-verbal cues of interviewees.

AI may struggle with managing the unpredictable flow of conversations [7]. In qualitative research, interviewees can steer discussions in unexpected directions, requiring researchers to make immediate judgments and respond with flexibility. Seale, Gobo, Gubrium, and Silverman [8] emphasize the significant role of an interviewer's intuition and the ability to adapt questions contextually within the interview process.

Moreover, conducting interviews in qualitative research involves an ethical responsibility to protect the privacy and rights of interviewees. According to Dahal [9], AI has limitations in making these ethical judgments autonomously. Warren and Karner [10] highlight the importance of ensuring the safety and well-being of interviewees during the interview process, stressing that the moral judgment and responsibility of human researchers are essential in this regard.

3. Limitations of Self-Study and Autoethnography

Self-study and autoethnography are qualitative research methodologies that provide deep insights into the researcher's personal experiences and practices [11]. However, these methodologies have their limitations. While reliability and validity are considered key values in traditional qualitative research [12], self-study and autoethnography challenge these values due to the unique characteristic of the researcher being the subject of the study.

One of the primary criticisms of both self-study and autoethnography is the inherent subjectivity and potential bias in the research [13]. Since these methodologies rely heavily on the researcher's personal experience and reflection, there is a risk of self-serving bias, where the researcher may unintentionally present themselves in a more favorable light or selectively report data that supports their preconceived notions. According to Chang [14], this bias can undermine the credibility and reliability of the research findings, as the personal nature of the research can lead to a lack of critical distance.

Another significant limitation of self-study and autoethnography is the challenge of generalizability. These methodologies focus on in-depth exploration of individual experiences, making it difficult to apply the findings to broader populations. Ellis and Bochner [1] argue that while these methods can provide rich, detailed insights, the findings are often context-specific and may not be applicable to other settings or individuals. This limitation raises concerns about the external validity of research conducted using these methods.

The success of self-study and autoethnography largely depends on the researcher's reflexivity—their ability to critically examine their own role in the research process [15]. However, achieving a high level of reflexivity can be challenging, as it requires the researcher to be constantly aware of their own biases, assumptions, and influence on the research. It has been emphasized that without adequate reflexivity, the research can become overly subjective and lack the critical rigor necessary for academic research.

While self-study and autoethnography offer valuable insights into personal experiences and practices, they also present significant limitations, particularly in terms of subjectivity, generalizability, ethical considerations, and the need for reflexivity. Researchers using these methodologies must recognize these challenges and actively address them to ensure their research remains credible and ethically sound.

4. New Methodology: AI-Augmented Self Interview

This study proposes the use of AI as a qualitative researcher and interviewer to address the limitations inherent in autoethnography and self-study. The primary distinction between self-object research and other qualitative research methods lies in the fact that the researcher and the subject are the same individual. As a result, the process of conducting interviews or surveys, which typically involves a question-and-answer exchange, is often omitted. This omission introduces significant challenges in terms of objectivity, generalizability, and reliability. To enhance the reliability and objectivity of self-object research, this study suggests a novel approach that utilizes GPT-based AI—already validated for its conversational capabilities and its ability to organize and analyze qualitative research content—to create a separation between the researcher and the subject, even though they are the same individual.

This study does not aim to fully replace qualitative researchers with AI. Instead, it focuses on addressing the absence of interviews—an essential procedure in traditional human-subject qualitative research—within the context of self-focused research. By employing AI as both an interviewer and an analyst, the study introduces a method to separate the actual subject from the virtual researcher, onto whom the subject is projected, thereby creating a process akin to looking into a mirror. The image in the mirror, though a virtual construct formed in the human eye, is still based on an existing reality, providing a means to confirm the true appearance of the real subject.

By utilizing AI as a virtual researcher, this study reinstates the interview process, re-establishing the separation between the researcher and the subject. The limitations of AI as an interviewer, including its incomplete understanding of context, difficulty in empathizing, and lack of awareness of ethical issues, can be partially mitigated when the interviewee is a professional qualitative researcher conducting a self-study [16]. This mitigation is possible due to the researcher's expertise and their understanding of the limitations inherent in AI technology.

Figure 1 summarizes the step-by-step 'AI-augmented self-interview' procedure used in this study. The researcher first provides prompts and background information (preparation), after which a large language model (LLM) conducts a one-on-one adaptive interview (interview). The interview log is then thematically organized by the LLM as a first pass and refined by the researcher (analysis and review). This workflow re-introduces structure and reflective distance commonly missing in self-study, thereby improving rigor and traceability.

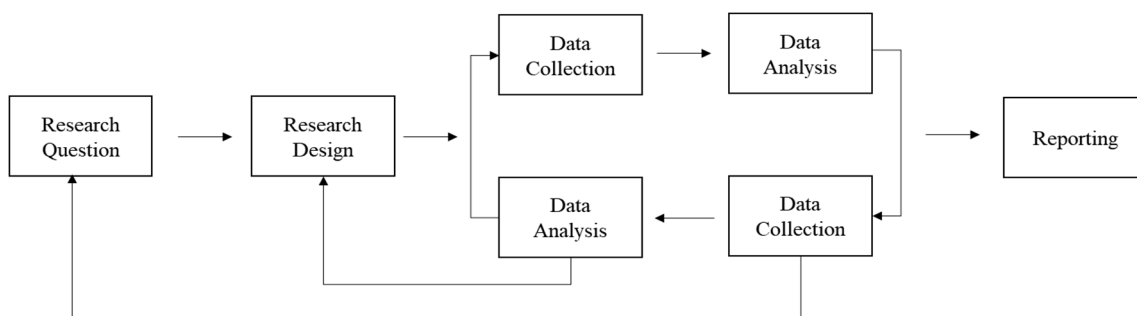


Figure 1. Preparation (prompt/background) → LLM-led interview (adaptive, turn-by-turn) → AI-assisted analysis (first-pass theming/coding) → Researcher review (refinement and adjudication). The workflow is a structural device to bolster consistency and reflexivity in autoethnographic self-study.

Figure 2 contrasts a conventional autoethnography design with the proposed AI-augmented design. Traditional self-study (left) relies primarily on introspective narrative with less formalized interviewing and cross-checks. The AI-augmented approach (right) positions the LLM as interviewer and analytic aide, strengthening question continuity, auditability, and a practical separation between ‘researcher’ and ‘subject.’ This comparison illustrates how evidence generation becomes more procedural and replicable.

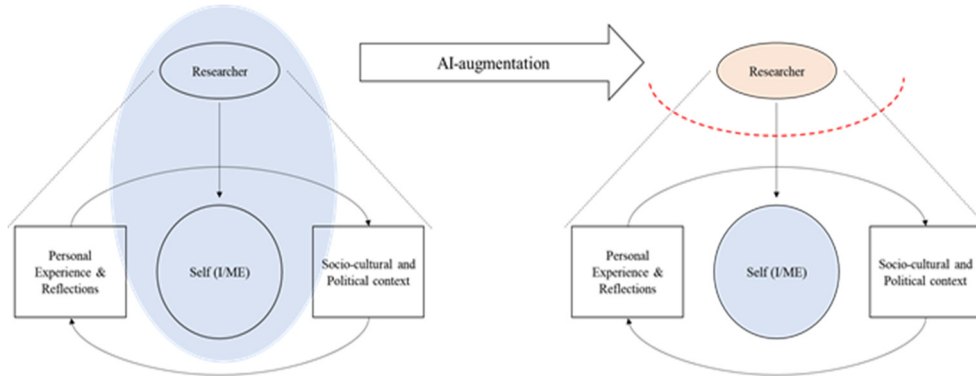


Figure 2. Schematic diagram of auto-ethnographic research before and after AI Augmentation

4.1 Interview Protocol

To improve reproducibility, we formalize the AI-augmented self-interview as a standard operating procedure (SOP).

- 1. Participants/setting.** Single-participant autoethnography (the author) conducted in a private setting without observers; screen/audio capture disabled.
- 2. Model & parameters.** LLM: [*model name/version*]; temperature = 0.2 (low randomness for stability); max tokens = [*x*]; system message fixes role as “clinical-style, non-therapeutic qualitative interviewer.” Model/version are logged to mitigate drift.
- 3. Prompt scaffold.**
 - **System:** “You are a qualitative interviewer. Use open, non-leading probes; avoid diagnosis or moral judgment; do not offer therapy or advice.”
 - **Context:** 250–400 words of research background and domain glossary.
 - **Opening:** “We will conduct a self-interview about [*topic*]. Begin with broad experiences, then narrow to concrete episodes. Ask one question at a time.”
- 4. Turn-taking rules.** One question per turn; require a minimum 3–5 sentences per answer; interviewer summarizes and checks understanding every 5–7 turns (“listener summary”); allow the participant to flag “off-limits” areas.
- 5. Probe set.** Funnel from grand tour → mini tour → contrast/probe for negative cases → “what would convince you otherwise?” reflexive challenge.
- 6. Stop conditions.** Terminate at 45–60 minutes or after saturation (no new codes over 3 consecutive rounds).
- 7. Audit trail.** All prompts/outputs time-stamped; interviewer summaries, code changes, and rationale logged.
- 8. Post-interview analysis.** LLM produces a **first-pass code list** (themes/subthemes/quotes). Researcher adjudicates (merge/split/rename codes), writes a reflexive memo, and documents disagreements.
- Quality checks.** (1) **Test–retest** mini-interview (10–15 min) within 72 hours on two focal episodes; (2) **Blind human review** of a 20–30% transcript sample for code convergence; (3) **Prompt sensitivity** check by re-running the first 10 turns with synonyms in the context primer.

4.2. Ethical Boundaries, Emotional Nuance, and Deep Context

LLMs lack lived experience and may miss emotional subtext, situational ethics, and thick context that a skilled human interviewer detects. We therefore:

- (a) restrict the agent to non-therapeutic interviewing;
- (b) mandate content warnings and opt-out for sensitive topics;

- (c) require an ethics checklist (consent to self-study, data retention plan, redaction of third-party identifiers);
 - (d) explicitly instruct the model to avoid moral prescriptions; and
 - (e) use human-in-the-loop adjudication for any interpretation involving value judgments or potential harm.
- These measures do not eliminate the limits but make them visible and governable.

5. Practical Example and Results

This study explores the potential of utilizing AI as a qualitative researcher and interviewer to overcome the limitations of autoethnography and self-study previously discussed. By applying AI in the author's own autoethnographic research, the study provides an example to examine its effectiveness in addressing these challenges.

To conduct this, the study employs ChatGPT-4o, the latest large language model released by OpenAI [17]. Prior to conducting the conversation, the AI is trained with a brief overview of the research topic and relevant information about the research subject (Author). The research is then conducted in a question-and-answer format, where prompts are used to facilitate dialogue between the author and the AI, allowing an exploration of the effectiveness of AI as a tool to overcome the challenges of autoethnography and self-study.

Table 1 reports the minimal background variables needed to interpret the case context (e.g., role, industry, academic status). These variables contextualize utterances and enable readers to track where codes/themes are anchored. All items are presented at a non-identifiable level to protect anonymity.

Table 1. participant (author) background for context. Provides role/industry/academic status to situate interpretation of codes and themes.

Category	Description
Gender	Male
Nationality	Republic of Korea (South Korea)
Age	30 years old
Industry	Semiconductor Manufacturing
Job Role	Human Resources
Major	Management Study
Category	Description

- Research Topic for Self research

The Challenges of Balancing Work and Part-Time Graduate Studies.

- The first command to input into Chat GPT-4o

"You are a qualitative researcher conducting an interview on [Research Topic: The Challenges of Balancing Work and Part-Time Graduate Studies] with a person who has the same information as in the attached table. Please continue the interview until the participant enters the word [End of Interview]. Additionally, ask only one question at a time, and after receiving one answer, ask one question that is most suitable for exploring the research topic based on the previous question and answer. Now, please begin the interview."

- The final command to input into Chat GPT-4o after typed [End of Interview]

"Based on the interviews conducted so far, as a qualitative researcher, please analyze the interview content using qualitative research methods, such as categorizing the content into themes/subthemes or creating a code book. And describe the research findings derived from these interviews."

The interview process was conducted for over 2 hours to secure data sufficiently. To ensure the consistency of the collected dialog, the researcher conducted the interview in an isolated environment, implementing environmental controls to maintain a high level of focus. These controls included taking five breaks, each lasting less than 30 minutes. The qualitative analysis of the interview obtained through this methodology is as follows.

- Research Findings written by ChatGPT-4o

The key research findings derived from these interviews are as follows: Interaction between Time Management and Stress Management: The strategies for time management and stress management interact with each other, playing a significant role in balancing studies and work. These strategies have been effectively applied during the master's program and are planned to be utilized continuously during the PhD program.

Importance of Rest: The importance of rest and recharge, as mentioned by the participant, is not only for stress management but also for contributing positively to creativity and research performance. This insight is crucial in qualitative research, providing practical strategies for those balancing studies and work.

Strategic Planning for Long-term Goal Achievement: The interview participant focuses on achieving long-term goals by aligning academic pursuits with career direction. This is presented as an important strategic plan for sustainable growth.

The novel methodology presented in this study enabled a focused and in-depth exploration of the author's personal experiences balancing academic responsibilities with part-time graduate studies, even within the constraints of a short-term self-study. Through intensive and iterative questioning of key themes, the author was able to delve deeper into critical keywords.

Moreover, by producing outcomes analogous to those of conventional qualitative research, this approach not only enhanced the reliability and objectivity of the findings to a preliminary extent but also provided valuable insights into potential directions for further investigation, establishing it as a meaningful and effective research method.

As a key example, ChatGPT explored and emphasized the significance and effects of "rest" in balancing studies and work through repetitive and in-depth questioning, leading to meaningful analysis. The interview process is as follows:

ChatGPT: "Due to the difficulty of having to give up high grades when it becomes challenging to attend classes because of business trips or urgent work, it seems like you would experience significant stress. When these situations occur repeatedly, how do you manage the stress and pressure between work and studies? If you have specific methods or resources you use to overcome these challenges, I would appreciate it if you could share them."

Answer: "In fact, as I manage my time between work and studies, I try to practice mindset management to avoid getting stressed out by the work or studies themselves. I also reflect on why I made this difficult choice, returning to the original decision. I keep in mind that this is just a two-year master's program, which will pass quickly, and that there will be definite rewards afterward. However, even with this approach, stress seems to accumulate. At those times, I manage stress by taking a complete break during the holidays or putting research aside for about a week. I'm also grateful to have peers who share the same stress and help find solutions together."

ChatGPT: "I find it impressive that you use various methods for stress management, such as mindset management, goal reflection, and solving problems through empathy with peers. However, you mentioned that when stress accumulates, you take a break or temporarily stop your research. How does this approach affect your work or studies? For example, does taking time off to relieve stress have a positive or negative impact on your work or studies afterward?"

Answer: "In fact, a short break seems to provide some refreshment. Although there's no progress during the break, I often get new inspirations from things outside of work and studies. For example, I got the idea to use AI as a mirror for self-reflection as a new research topic during a break. I believe such inspiration was possible because of the break, so I consider it a very positive process. However, if I take too long of a break, I think it could have a negative effect by dulling my way of thinking or preventing such new inspirations."

ChatGPT: "It's very interesting that the inspiration you gain through breaks positively impacts both your studies and work. However, you also consider the possibility that taking too long of a break could have a negative impact, which shows your effort to maintain balance. To maintain this balance, do you have any specific standards or rules that you set for yourself? For example, how often or how long do you take breaks? Or, could you explain how you determine when to take a break based on your level of accumulated stress?"

Answer: "No matter how much free time I have, I don't invest more than four hours a day in studies. And no matter how busy I am, I try to invest at least 30 minutes in studies. When I decide to take a break, I completely avoid anything related to studies. However, I only use this strategy when there are no assignments with upcoming deadlines. In other words, I completely switch off and take a solid break only when there's nothing else to worry about. After about a week of rest, I start wanting to return to research and study, and that's when I feel the least stressed."

ChatGPT: "It seems like you are making a very systematic effort to maintain balance. It's impressive that you invest a certain amount of time in studies and, during planned breaks, completely detach from academics. It's fascinating that this method effectively reduces stress and maintains your passion for studies and research. You mentioned that this strategy helps reduce stress and maintain passion. How do you think this approach will impact your long-term professional growth or academic success? For example, how do you think the methods you're currently using will contribute to achieving your future career goals?"

Answer: "I don't think this approach directly impacts my professional growth or academic success. I believe those are more influenced by whether the direction of my studies and career align. However, by taking this approach, I think I can continue both work and studies without getting burned out. If I can pursue this balance for a longer period, I believe I can continue to grow over a longer period, which would have a positive effect on my future career goals, academic goals, and skill development."

Table 2 presents the LLM's first-pass thematization of the interview transcript. The model surfaced tentative themes/subthemes from cues such as repetition, emphasis, and causal links; the researcher then consolidated terminology, removed redundancies, and verified exemplar segments to finalize the initial code system. The table demonstrates how AI-generated structure transitions into a human-audited thematic framework

Table 2. AI-assisted thematic structure from self-interviews. LLM first-pass themes/subthemes refined through researcher review to yield the final analysis frame.

Code	Definition	Example
Time_Allocation Strategy	Strategies used to allocate specific amounts of time to studies and work to maintain balance.	Limiting study time to no more than 4 hours a day.
Priority_Adjustment	Adjusting the priorities between work and studies, especially when managing deadlines or during busy periods.	Only taking breaks from studies when there are no immediate deadlines.
Mindset_Management	Managing stress through mental strategies that focus on the rationale behind pursuing both work and studies.	Revisiting the reasons for choosing to pursue both a career and part-time studies.
Goal_Reflection	Reflecting on initial goals and decisions to reinforce motivation during challenging periods.	Reflecting on the original motivations for undertaking graduate studies during stressful times.
Rest_and_Recharge	Taking deliberate breaks from academic work to recharge, gain new perspectives, and prevent burnout.	Taking a week off from studies to rest and gain new inspiration for research.
Alignment_of_Academic _and_Professional_Goals	Ensuring that academic pursuits align with long-term career goals to facilitate sustained growth.	Choosing a graduate program that offers courses relevant to one's career and allows for continuous professional development.
PhD_Program_Planning	Strategic planning for the PhD program that includes building on the methods and experiences from the master's program.	Planning to focus solely on research during the PhD, leveraging completed coursework from the master's program.

6. Discussion and Conclusion

To enable re-implementation, we provide the exact prompts for the interviewer role and the analysis stage, the parameter settings used during interaction, and an anonymized transcript fragment sufficient to reconstruct the main thematic tables. The interview and analysis loops are described in sufficient operational detail to recover the sequence of actions, and complexity scales linearly with the number of turns within the limits of the model's context window. Safety and governance are addressed by constraining the agent to a non-therapeutic role, offering an opt-out for sensitive topics, redacting third-party references, and pinning model versions and licenses for all artifacts. These measures do not eliminate ethical risks or bias, but they render them visible and governable while preserving the audit trail needed for downstream scrutiny.

This study explores the potential of utilizing AI as a qualitative researcher and interviewer to overcome the limitations of autoethnography and self-study previously discussed. By applying AI in the author's own autoethnographic research, the study provides an example to examine its effectiveness in addressing these challenges.

The findings from this study underscore the transformative potential of integrating AI, particularly Large Language Models (LLMs), into qualitative research methodologies such as autoethnography and self-study. No one can see their own reflection without a mirror. Similarly, for researchers conducting autoethnography, a tool that functions as a mirror—allowing them to view their experiences and perceptions more objectively and concretely—would enhance the reliability of their research. By utilizing AI as both an interviewer and an analytical tool, this research offers a novel approach to overcoming the challenges traditionally associated with these methodologies, including subjectivity bias, lack of generalizability, and difficulties in maintaining objectivity.

One of the most significant contributions of this study is the demonstration that AI can bring structure and consistency to self-reflective research processes. However, the current example does not fully establish that AI definitively enhances objectivity, reliability, or generalizability; it instead shows the potential and feasibility of using AI-driven interviews and analysis as a proof-of-concept.

Moreover, the AI's role in generating new insights through iterative questioning reveals its potential to delve deeper into the subject matter than might be possible through traditional self-reflection alone. The case study of the author's own experience balancing work and part-time graduate studies illustrates how AI can aid in uncovering nuanced aspects of the research topic, such as the interplay between stress management and time allocation, that might otherwise remain unexplored.

6.1 Addressing Objectivity, Reliability, and Generalizability

Our proof-of-concept is preliminary and does not include a controlled comparison against human-led interviews. We therefore report the following bounded evidence claims:

Objectivity. The method increases traceability—via an audit trail of prompts, interviewer summaries, and code revisions—rather than claiming neutrality. We frame “objectivity” as procedural transparency and explicit rationale for interpretive moves.

Reliability. We operationalize reliability as (i) test–retest stability of salient codes across a short interval and (ii) convergence between LLM first-pass themes and human adjudication on a transcript sample. In the present case we document the procedure and qualitative observations; we refrain from reporting inferential statistics due to single-case scope.

Generalizability. Findings are analytic, not statistical. The single-context design supports theory-inflected propositions that require cross-case replication.

Table 3. summarizes key **limitations** and **mitigations** we adopt and/or recommend. We present these limits explicitly to align claims with evidence and to scaffold future studies that can quantify effect sizes.

Table 3. Limits of LLM-based self-interview and mitigations.

Limit	Practical risk	Mitigation in this study	Future requirement
Emotional nuance detection	Missed affective cues; superficial probes	Non-leading, feelings-oriented probes + listener summaries; researcher reflexive memo	Mixed-methods with human interviewer or sentiment-rich co-coding
Ethical judgment	Inappropriate advice; moralizing	Non-therapeutic system role; ethics checklist; opt-out	Human oversight for value-laden interpretations; IRB guidance
Deep context	Over-general or wrong priors	Provide domain primer; examples; glossary	Multi-session elicitation; member-checking
Hallucination/prompt sensitivity	Spurious inferences	Low temperature; quote-anchored coding; re-prompt check	Version pinning; prompt ablations
Version/model drift	Non-replicable outputs	Log model/version/params	Pre-registration, release archival
Single-case scope	No external validity	Position as analytic generalization	Multi-case replication and triangulation
No human-led control	No comparative effect estimate	Transparent declaration of absence	Randomized crossover against human interviewers

6.2 Potential Solutions to AI Limitations

Despite the promise shown, AI technology still lacks emotional intelligence, ethical judgment, and deep contextual understanding [6], [9]. However, recent advancements in prompt engineering suggest that carefully crafted prompts, iterative instructions, and structured role-playing can partially overcome these issues. For example, instructing the AI to adopt multiple viewpoints—such as an “ethics reviewer” or a “mental health advisor”—may help identify ethically sensitive areas during an interview. Researchers can further integrate debriefing sessions with actual human experts to ensure ethical safeguards and emotional well-being are addressed.

Nevertheless, these solutions remain exploratory. While LLMs can be fine-tuned or guided to emulate empathy and contextual awareness, the authenticity of such “empathy” and the depth of cultural understanding remain limited. Thus, human oversight and critical reflexivity are still paramount in studies where emotional and ethical complexities play a central role.

6.3 Conclusion and Future Directions

As AI technology continues to develop, it is likely to become an indispensable tool in qualitative research, provided that researchers remain mindful of its limitations and continue to prioritize the human aspects of their work. The idea that LLMs could serve as an additional perspective or “mirror” in self-study and autoethnography is a promising one, especially for generating structured interviews and preliminary analytical overviews. Yet, this study recognizes that the evidence provided is largely exploratory, offering a foundation rather than a definitive proof of concept for enhanced objectivity or reliability.

Ultimately, the integration of AI into qualitative research represents a promising avenue for enhancing the quality and scope of self-reflective studies. Future investigations should aim to design comparative validation studies, explore advanced prompt-engineering solutions for ethical and emotional contexts, and develop standardized protocols for AI-augmented qualitative research. This would illuminate the true potential—and the boundaries—of using LLMs to advance autoethnographic practices, paving the way for more rigorous and innovative applications of AI in qualitative inquiry.

Table 4 provides an excerpt of the condensed codebook employed in analysis. Each code includes a definition and usage example, and was applied consistently across the transcript to maintain interpretive reliability. This codebook also serves as a reusable template for future inter-rater reliability checks (e.g., Cohen’s κ) or cross-case comparisons.

Table 4. Condensed codebook used in analysis. Definitions and examples that standardize coding and support reproducibility.

Main Theme	Subtheme	Description
Time Management and Balance Stress Management	Time Allocation Strategy	Clear daily time allocation for studies and work. For instance, limiting study time to no more than 4 hours a day.
	Priority Adjustment	Adjusting priorities between work and studies, such as taking complete breaks only when there are no upcoming deadlines.
Long-term Growth and Alignment Time Management and Balance	Mindset Management and Goal Reflection	Using mindset management and revisiting the reasons behind difficult choices to manage accumulated stress and maintain motivation.
	Rest and Recharge	Taking complete breaks from studies to gain new inspiration and maintain enthusiasm for research.
Stress Management	Alignment of Academic and Professional Goals	Focusing on the alignment between academic pursuits and career direction as a key factor for long-term growth and success.
	PhD Program Planning	Plans to apply similar strategies in the PhD program, aiming for increased research output and growth through consistent study habits.

A natural next step is a controlled comparison between AI-led and human-led interviews using a randomized crossover. The same participants would complete both conditions in counterbalanced order on the same focal topic, with pre-registered outcomes covering thematic richness, inter-coder agreement, short-interval stability, participant-rated empathy and comfort, and the share of claims directly supported by quotations. Such a design would provide the comparative evidence that a single-case feasibility study cannot, and it would test whether the protocol’s gains in traceability and stability persist when scaled beyond an autoethnographic context.

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Appendix A (new): Interview Script & Prompt Templates

Opening prompts (choose one): "Walk me through a concrete episode when [topic] mattered most...", "Tell me about the last time you faced [tension]—what happened first?"

Probe library: "Can you give a contrasting example?", "What would make you change your view?", "What was the hardest moment emotionally?"

Listener summary template (every 5–7 turns): "Here's what I heard... Did I get that right? What did I miss?"

Closure: "What, if anything, feels unresolved or misrepresented?"



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