



Strengthening Qualitative Research Competence through an International Seminar on AI-Assisted Qualitative Data Analysis

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ABSTRAK

Penelitian kualitatif memerlukan kompetensi analitis yang kuat, sementara kecerdasan buatan generatif menghadirkan peluang sekaligus tantangan etis bagi peneliti. Kegiatan pengabdian ini bertujuan meningkatkan pemahaman peserta mengenai analisis data kualitatif berbantuan AI dan penggunaannya secara etis melalui seminar internasional daring “Analyzing Qualitative Data”, yang diselenggarakan Universitas Tanjungpura bersama empat universitas mitra dari Indonesia, Filipina, dan Malaysia pada 19 Juli 2026. Seminar melibatkan tiga pembicara internasional, sesi tanya jawab, dan formulir umpan balik yang diisi oleh 156 peserta. Data tertutup dianalisis secara deskriptif, sedangkan respons terbuka dianalisis secara tematik. Hasil menunjukkan bahwa 78,9% peserta memperoleh pengetahuan tentang penggunaan AI dalam analisis kualitatif, sementara 140 dari 147 responden substantif menegaskan bahwa peneliti harus tetap memiliki kewenangan interpretatif akhir. Transparansi (46,0%) dan privasi data (42,0%) menjadi perhatian etis utama, dan 89,1% peserta menyatakan puas. Seminar ini memperkuat literasi AI yang bertanggung jawab dan kolaborasi akademik internasional dalam pengembangan kapasitas penelitian kualitatif.

Kata kunci: Analisis data kualitatif; Kecerdasan buatan; Etika penelitian; Seminar internasional; Pengabdian kepada masyarakat

ABSTRACT

Qualitative research demands rigorous analytical competence, while generative artificial intelligence presents opportunities and ethical challenges for researchers. This community engagement activity aimed to strengthen participants' understanding of AI-assisted qualitative data analysis and its ethical use through an online international seminar entitled “Analyzing Qualitative Data,” organized by Universitas Tanjungpura with four partner universities from Indonesia, the Philippines, and Malaysia on 19 July 2026. The seminar involved presentations by three international speakers, a question-and-answer session, and a post-seminar feedback form completed by 156 participants. Closed-ended data were analyzed descriptively, while open-ended responses were analyzed thematically. Results showed that 78.9% of participants learned about AI use in qualitative analysis, while 140 of 147 substantive respondents affirmed that researchers should retain final interpretive authority. Transparency (46.0%) and data privacy (42.0%) were the main ethical concerns, and 89.1% reported satisfaction. The seminar strengthened responsible AI literacy and international academic collaboration in qualitative research capacity building.

Keywords: Qualitative data analysis; Artificial intelligence; Research ethics; International seminar; Community engagement



INTRODUCTION

Qualitative research occupies a central place in the social sciences and education because it offers rich, context-sensitive understanding of human experience that numerical data alone cannot capture. Its value, however, depends heavily on the rigor of the analytical process: organizing raw text into codes, developing those codes into themes, and interpreting the themes within their social and cultural context (Braun & Clarke, 2006, 2019). This process is often time- and labor-intensive, especially for novice researchers.

Generative artificial intelligence (AI), particularly large language models such as ChatGPT, can support qualitative analysis through coding, pattern identification, and text summarization, while final interpretive judgment remains the responsibility of the researcher (Bijker et al., 2024; Nguyen-Trung, 2025; Wachinger et al., 2025). Morgan (2023), similarly observed that AI-based tools show considerable promise for qualitative data analysis provided that researchers understand their limitations and employ them as an assistant rather than a replacement for analytical judgment. Hitch (2024) further argued that AI-augmented qualitative analysis is likely to become an increasingly common feature of research practice, making early exposure and structured guidance for researchers essential.

A further limitation concerns data format. Most generative AI tools are optimized for continuous prose, while qualitative datasets often include semi-structured or non-textual materials such as coded matrices, cross-tabulations, field-note tables, and figures. Large language models may misinterpret or oversimplify such formats, flattening nuanced relationships or overlooking patterns visible only through table or figure structure. Without independent verification, researchers may therefore introduce subtle misrepresentations into their analysis and reporting. This highlights the need for training that addresses not only the ethical use of AI but also its practical limitations when working with qualitative data beyond narrative text.

The use of AI also raises ethical concerns, including data privacy, algorithmic bias, transparency, plagiarism, and fabricated results (Chen et al., 2024; Güneş & Kaban, 2025). International bodies have responded to these concerns: UNESCO's Recommendation on the Ethics of Artificial Intelligence emphasizes the importance of maintaining human oversight, accountability, and transparency whenever AI is used in research and other high-stakes processes (AllahRakha, 2024). Within academic publishing, professional and editorial guidance increasingly requires explicit disclosure of AI assistance and continued human responsibility for the validity and integrity of analytical outputs (Limongi, 2024; Perkins et al., 2024; Resnik & Hosseini, 2026). These developments mean that researcher training can no longer treat technical competence and ethical competence as separate concerns; capacity-building programs must address both simultaneously.

This need is particularly relevant for Indonesian higher education institutions where structured guidance on AI-assisted qualitative research is still developing. International collaboration can expand access to expertise and methodological perspectives while strengthening research capacity (Waham et al., 2023). This urgency

is compounded by the pace at which generative AI tools are already being adopted informally by students and early-career researchers, often ahead of any corresponding institutional guidance, formal coursework, or ethical oversight. Left unaddressed, this gap risks producing a generation of researchers who use AI tools fluently but uncritically, with direct consequences for the validity, defensibility, and integrity of qualitative findings submitted for publication.

In response, Universitas Tanjungpura (UNTAN), together with Mindanao State University–Maigo College of Science, Education and Technology (MSU-MCEST, Philippines), Universiti Malaysia Pahang Al-Sultan Abdullah (UMPSA, Malaysia), Universitas Kutai Kartanegara (UNIKARTA), and Universitas PGRI Adi Buana Surabaya, organized the international seminar “Analyzing Qualitative Data” on 19 July 2026. The seminar aimed to introduce qualitative analysis and AI-assisted methods, promote ethical AI use, strengthen research competence and international collaboration, and provide practical guidance on coding and thematic analysis. This article reports the implementation and participant feedback.

IMPLEMENTATION METHOD

The one-day seminar was delivered synchronously via Zoom on 19 July 2026 from 1.00 p.m. WIB. It was jointly organized by Universitas Tanjungpura and four partner institutions in Indonesia, the Philippines, and Malaysia.

Three resource speakers presented sequentially: Dr. Karen Gay P. Dy discussed the ethics of AI in qualitative research; Dr. Wan Juman Fauzi presented strategies for moving from codes to themes and for presenting qualitative data effectively; and Urai Salam, Ph.D. discussed AI-assisted qualitative data analysis, including the distinction between deductive and inductive coding approaches. The session was facilitated by a moderator, and each presentation was followed by an open question-and-answer segment in which participants engaged directly with the speakers.

Participants were recruited through open online announcements circulated by the organizing and partner institutions. Attendance was recorded through a combined Participant Attendance and Feedback Form (Formulir Presensi dan Umpan Balik) distributed at the close of the seminar. The open-ended questions asked participants what they had learned from the seminar, whether AI can be used for qualitative data analysis and why, what ethical considerations should be observed when using AI in research, and what topics they would like to see in future seminars or workshops. The closed-ended item asked participants to rate their overall satisfaction with the seminar.

A total of 156 valid responses were collected and retained for analysis after removing duplicate or blank submissions. For the open-ended questions, non-substantive entries (single characters, punctuation marks, or clearly off-topic answers) were excluded from thematic counts on a per-question basis; the resulting analytic base ranged from 145 to 152 valid responses depending on the question.

A total of 156 valid responses were retained after removing duplicate or blank submissions. Institution and country entries were standardized before tabulation.

Non-substantive open-ended responses were excluded on a per-question basis, leaving 145–152 valid responses depending on the question.

Closed-ended data were analyzed using frequencies and percentages. Open-ended responses were analyzed thematically following Braun & Clarke (2006, 2019): responses were read, inductive codes were generated, related codes were grouped into themes, and theme frequencies were calculated. Because responses could contain multiple themes, percentages do not necessarily total 100%. Representative responses were paraphrased to preserve anonymity.

RESULTS AND DISCUSSION

Participant Profile

Participants originated predominantly from Indonesian institutions, with a small number joining from Malaysia, Pakistan, and China, confirming that the seminar reached an international, though Indonesia-centered, audience. At the institutional level, participation was dominated by the two lead organizing universities (Universitas Tanjungpura and Universitas PGRI Adi Buana Surabaya) together with smaller but meaningful representation from the Malaysian partner institution (UMPSA), UNIKARTA, and ten other universities and institutes across Indonesia. Table 1 presents the distribution of participants by institution and country.

Table 1. Participant Distribution by Institution and Country

Institution	n	%
Universitas Tanjungpura (UNTAN)	79	50.6%
Universitas PGRI Adi Buana Surabaya	60	38.5%
Universiti Malaysia Pahang Al-Sultan Abdullah (UMPSA)	5	3.2%
Universitas Kutai Kartanegara (UNIKARTA)	2	1.3%
Other institutions (10 institutions, 1 participant each)*	10	6.4%
Total	156	100%

*Other institutions include Universitas Sebelas Maret, UINSU, Universitas Bina Mandiri Gorontalo, UNESA, IAIN Pontianak, ELTC (KPM), Universitas Negeri Malang, Universitas Terbuka, Politeknik Angkatan Laut, and UAB.

The attendance form did not capture participants' occupation or academic level, so the profile presented here is limited to institutional and national affiliation. The concentration of participants in the two lead organizing universities is expected given their role in disseminating the seminar invitation, while the presence of participants from Malaysia, Pakistan, and China, beyond the immediate consortium of five organizing institutions, indicates that the seminar's reach extended somewhat further than its formal partnership structure, consistent with the intended goal of strengthening international academic collaboration.

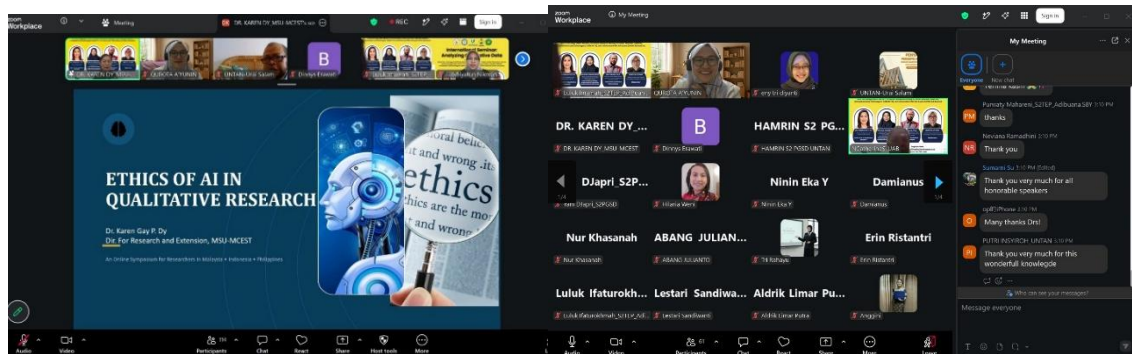


Figure 1. Zoom Seminar Documentation

Learning Outcomes

In response to the question “What did you learn from today's seminar?”, 152 of 156 responses were substantive and were included in the thematic analysis. Four recurring themes emerged, summarized in Figure 2.

Themes Emerging from Participant Learning Outcomes (n = 152)

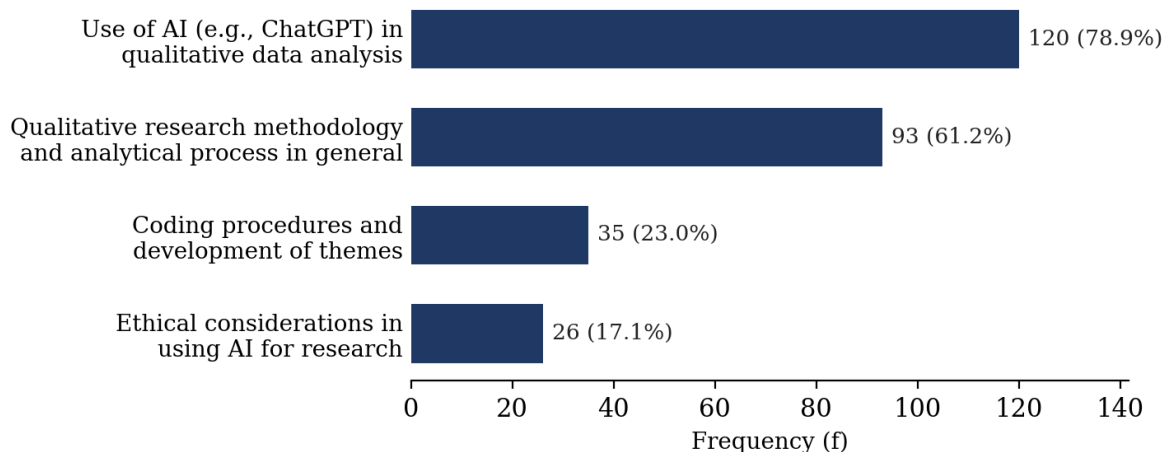


Figure 2. Chart of Learning Outcome Themes (n = 152)

The AI use in qualitative analysis was the most frequently reported learning outcome (78.9%), followed by general qualitative methodology (61.2%). Participants described AI as useful for organizing, coding, and interpreting data, often alongside learning about coding, themes, and research ethics. Coding and theme development were specifically mentioned by 23.0% of participants, while 17.1% highlighted ethical considerations. These responses suggest that participants viewed AI literacy as connected to, rather than separate from, qualitative research methodology.

AI Acceptance in Qualitative Research

Participants were asked directly whether AI can be used for qualitative data analysis and why. Of 147 substantive responses, 140 (95.2%) explicitly affirmed that AI can be used for this purpose, and not a single participant gave an outright negative

response. The finding suggests strong acceptance of AI as an analytical aid when used appropriately (Bijker et al., 2024; Nguyen-Trung, 2025).

However, acceptance was rarely unconditional. Within the affirmative responses, several sub-themes recurred: 60 responses (40.8%) cited AI's capacity to identify patterns, categorize data, or organize it into themes; 69 responses (46.9%) explicitly stated that the researcher must retain interpretive authority and responsibility for the final analysis, positioning AI as an assistant rather than a decision-maker; 46 responses (31.3%) emphasized efficiency and time savings; and 17 responses (11.6%) raised limitations related to bias, accuracy, or the need for caution in trusting AI-generated output without verification.

This pattern, widespread endorsement paired with insistence on human oversight, closely echoes the conclusions of Morgan (2023) and Wachinger et al. (2025), who found that while generative AI tools can meaningfully accelerate qualitative coding, interpretive validity still depends on sustained human judgment. As one participant put it, AI can help identify themes, categorize responses, and summarize large amounts of text, but the final interpretation should still be carried out by the researcher. Another framed the researcher as remaining “the designer and the boss” of the analysis, with AI serving a supporting rather than a directive role. This finding indicates that the seminar succeeded not merely in promoting AI adoption but in cultivating a critically calibrated form of adoption, in which participants distinguish between AI as a labor-saving tool and AI as a substitute for scholarly judgment, an important distinction given ongoing debate about the appropriate boundaries of AI use in academic work (Güneş & Kaban, 2025; Hitch, 2024).

Ethical Awareness

Asked what ethical considerations should be observed when using AI in research, 150 of 156 participants gave substantive answers. Responses were coded into eight overlapping ethical themes, presented in Figure 3., in descending order of frequency. Transparency (46.0%) and privacy or confidentiality (42.0%) were the most frequently identified concerns. Participants emphasized disclosing AI-assisted analysis, protecting confidential data, and avoiding the submission of sensitive or identifiable information to AI platforms. Accountability and plagiarism avoidance were also frequently mentioned.

These priorities align closely with the ethical frameworks emphasized in recent literature. UNESCO's Recommendation on the Ethics of Artificial Intelligence foregrounds transparency and human oversight as core principles for any AI-assisted process (Ramos et al., 2024), while Chen et al. (2024) and Güneş & Kaban (2025) similarly identify data privacy, transparency, and accountability as the central pillars of responsible AI use in academic research. The comparatively lower frequency of informed-consent responses (6.0%) suggests an area where future training could add value: while participants were highly attuned to AI-specific risks such as disclosure and data leakage, fewer connected these risks back to the foundational research-ethics requirement of obtaining participants' consent for how their data would be processed,

including by AI tools, an omission also noted as a gap in institutional AI-ethics policy by Resnik & Hosseini, (2026).

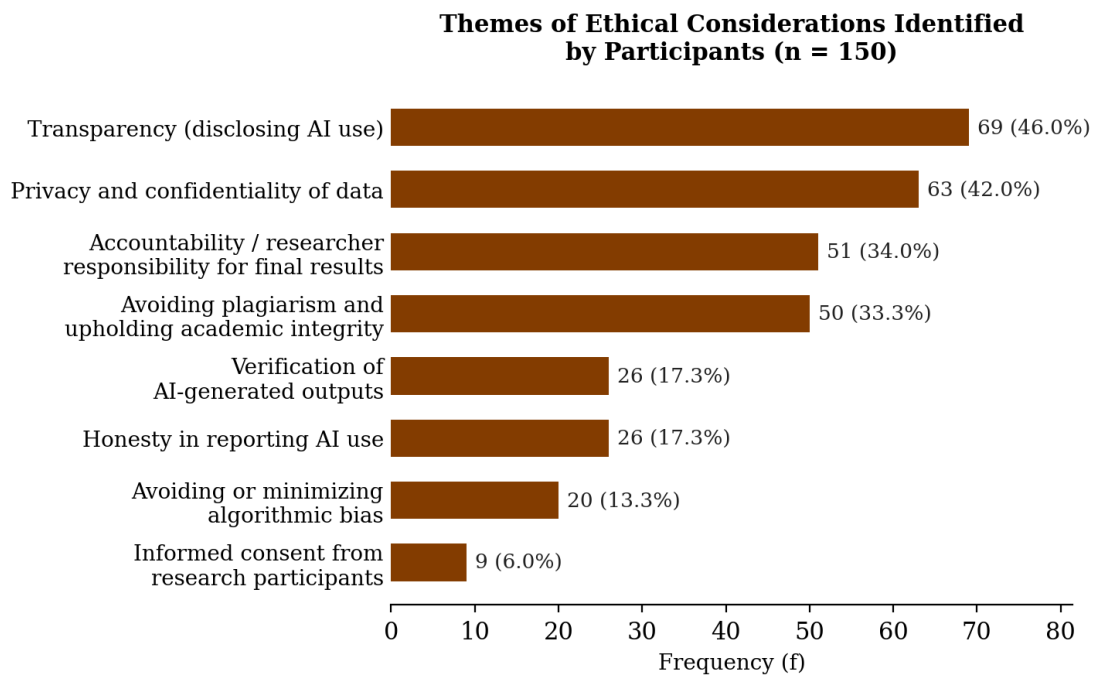


Figure 3. Chart of Ethical Consideration Themes (n=150)

Future Training Needs

When asked what topics they would like to see in future seminars or workshops, 145 of 156 participants provided substantive suggestions. Responses were grouped into seven categories, shown in Table 2.

Table 2. Most Requested Future Seminar Topics (n = 145)

Requested topic category	f	%
AI tools for research or teaching (e.g., ChatGPT, prompt engineering)	93	64.1%
Academic writing and journal publication (including Scopus-indexed writing)	29	20.0%
AI applications in education and learning media	29	20.0%
Quantitative research and statistics (SPSS, SmartPLS, R)	15	10.3%
Systematic literature review	10	6.9%
Qualitative software (NVivo, ATLAS.ti, MAXQDA)	9	6.2%
Mixed-methods research	5	3.4%

AI tools for research or teaching were requested most often (64.1%), including prompt engineering and AI-assisted academic writing. The demand for further training suggests that the seminar served as an entry point and that participants would benefit from structured, hands-on follow-up (Waham et al., 2023). Requests for qualitative

software such as NVivo, ATLAS.ti, and MAXQDA were lower (6.2%). Interest in academic writing and publication (20.0%) indicates that participants see AI-assisted analysis as part of a broader research-to-publication process.

Participant Satisfaction

All 156 participants rated their overall satisfaction with the seminar. Table 3 presents the distribution of responses.

Table 3. Participant Satisfaction with the Seminar (n = 156)

Satisfaction level	f	%
Very Satisfied	0	0.0%
Satisfied	139	89.1%
Neutral	17	10.9%
Dissatisfied	0	0.0%
Total	156	100%

Most participants (89.1%) reported being satisfied, while 10.9% selected neutral and none selected dissatisfied. The result indicates that the seminar was well received, while the absence of very satisfied responses suggests room for more interactive and hands-on activities in future programs.

Discussion

Read together, the five sets of findings tell a coherent story about how a short, single-session international seminar can shift participants' orientation toward AI-assisted qualitative research. First, on AI literacy: the near-unanimous endorsement of AI as a usable analytical aid (95.2% of substantive responses), combined with the dominance of AI-related content in reported learning outcomes (78.9%), indicates that the seminar substantially increased participants' comfort with and awareness of AI-assisted qualitative analysis, consistent with the growing empirical literature documenting AI's utility across coding, pattern recognition, and summarization tasks (Bijker et al., 2024; Han & Alexander, 2024; Nguyen-Trung, 2025).

Second, on qualitative research competence: the substantial proportion of responses referencing coding and theme development (23.0%) alongside general qualitative methodology (61.2%) suggests that the seminar reinforced core qualitative skills rather than treating AI as a shortcut around them. This dual emphasis mirrors calls in the literature for AI to be integrated as a complement to, rather than a replacement for, foundational qualitative competence (Morgan, 2023; Wachinger et al., 2025).

Third, on ethical AI adoption: the prominence of transparency (46.0%) and privacy (42.0%) as the leading ethical themes, together with meaningful attention to accountability and plagiarism avoidance, demonstrates that participants internalized the seminar's explicit ethics session rather than treating ethical use as an afterthought.

This outcome is particularly significant given documented gaps between institutional AI policy and researcher awareness elsewhere in the literature (Chen et al., 2024; Güneş & Kaban, 2025); a single seminar session appears to have meaningfully raised at least surface-level ethical awareness, even though deeper issues such as informed consent (6.0%) remain comparatively underdeveloped and merit further attention in future programming.

Fourth, on international collaboration: the participation of attendees from Malaysia, Pakistan, and China, in addition to the five formally partnered institutions, indicates that the seminar achieved a degree of cross-border reach consistent with its stated objective of strengthening international academic collaboration (Waham et al., 2023). The predominance of Indonesian participants, however, also reflects the practical reality that dissemination channels were strongest within the host institutions' own networks, suggesting that future iterations could benefit from more deliberate joint promotion across all partner institutions to achieve a more balanced international profile.

Fifth, on implications for higher education and future community engagement programs: the strong demand for follow-up training, particularly around AI tools, academic writing, and publication, points toward a clear opportunity for UNTAN and its partners to design a structured, multi-session capacity-building pathway rather than a series of standalone seminars. Such a pathway could sequence foundational qualitative methodology, AI-assisted analysis, ethics, and academic writing for publication, addressing the interconnected skill gaps that participants themselves identified. Embedding explicit modules on research ethics beyond AI-specific concerns (e.g., informed consent, participant protection) would further strengthen the ethical foundation on which AI-assisted research capacity is being built.

CONCLUSION AND SUGGESTIONS

The international seminar “Analyzing Qualitative Data,” involving 156 participants, strengthened AI-related qualitative research literacy, with 78.9% reporting increased understanding of AI-assisted analysis, 95.2% affirming its usefulness with researcher oversight, and 89.1% expressing satisfaction. Transparency and privacy were the leading ethical concerns, while participants showed strong interest in further training on AI tools, academic writing, and publication strategies. These findings highlight the need for continued capacity building through multi-session programs integrating qualitative methodology, AI-assisted analysis, research ethics, academic writing, and publication. Future programs should place greater emphasis on informed consent and strengthen joint promotion across partner institutions to encourage broader and more balanced international participation.

REFERENCES

- AllahRakha, N. (2024). UNESCO's Ai Ethics principles: Challenges and opportunities. *International Journal of Law and Policy*, 2(9), 24–36. <https://doi.org/10.59022/ijlp.225>
- Bijker, R., Merkouris, S. S., Dowling, N. A., & Rodda, S. N. (2024). ChatGPT for automated qualitative research: Content analysis. *Journal of Medical Internet Research*, 26, e59050. <https://doi.org/10.2196/59050>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp0630a>
- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589–597. <https://doi.org/10.1080/2159676X.2019.1628806>
- Chen, Z., Chen, C., Yang, G., He, X., Chi, X., Zeng, Z., & Chen, X. (2024). Research integrity in the era of artificial intelligence: Challenges and responses. *Medicine*, 103(27), e38811. <https://doi.org/10.1097/md.00000000000038811>
- Güneş, A., & Kaban, A. L. (2025). A Delphi study on ethical challenges and ensuring academic integrity regarding AI research in higher education. *Higher Education Quarterly*, 79(4), e70057. <https://doi.org/10.1111/hequ.70057>
- Han, S., & Alexander, G. (2024). Technology for healthcare workforce for older adults: ChatGPT-assisted qualitative analysis. *Innovation in Aging*, 8(Suppl 1), 1339. <https://doi.org/10.1093/geroni/igae098.4274>
- Hitch, D. (2024). Artificial intelligence augmented qualitative analysis: the way of the future? *Qualitative Health Research*, 34(7), 595–606. <https://doi.org/10.1177/10497323231217392>
- Limongi, R. (2024). The use of artificial intelligence in scientific research with integrity and ethics. *Future Studies Research Journal: Trends and Strategies*, 16(1), e845–e845. <https://doi.org/10.24023/FutureJournal/2175-5825/2024.v16i1.845>
- Morgan, D. L. (2023). Exploring the use of artificial intelligence for qualitative data analysis: The case of ChatGPT. *International Journal of Qualitative Methods*, 22, 16094069231211248. <https://doi.org/10.1177/16094069231211248>
- Nguyen-Trung, K. (2025). ChatGPT in thematic analysis: Can AI become a research assistant in qualitative research? *Quality & Quantity*, 59(6), 4945–4978. <https://doi.org/10.1007/s11135-025-02165-z>
- Perkins, M., Furze, L., Roe, J., & MacVaugh, J. (2024). The Artificial Intelligence Assessment Scale (AIAS): A framework for ethical integration of generative AI in educational assessment. *Journal of University Teaching and Learning Practice*, 21(6), 49–66. <https://doi.org/10.53761/q3azde36>
- Ramos, G., Squicciarini, M., & Lamm, E. (2024). Making ai ethical by design: The unesco perspective. *Computer*, 57(2), 33–43.

- Resnik, D. B., & Hosseini, M. (2026). Disclosing artificial intelligence use in scientific research and publication: When should disclosure be mandatory, optional, or unnecessary? *Accountability in Research*, 33(2), 2481949. <https://doi.org/10.1080/08989621.2025.2481949>
- Wachinger, J., Bärnighausen, K., Schäfer, L. N., Scott, K., & McMahon, S. A. (2025). Prompts, pearls, imperfections: Comparing ChatGPT and a human researcher in qualitative data analysis. *Qualitative Health Research*, 35(9), 951–966. <https://doi.org/10.1177/10497323241244669>
- Waham, J. J., Asfahani, A., & Ulfa, R. A. (2023). International collaboration in higher education: Challenges and opportunities in a globalized world. *EDUJAVARE: International Journal of Educational Research*, 1(1), 49–60.