



Contemporary Trends, Methodological Innovations, and Gaps in Educational Research: A Narrative Review

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Abstract

Educational research has experienced substantial methodological and thematic expansion over the past decade, driven by technological innovation, interdisciplinary collaboration, and evolving epistemological perspectives. This narrative review synthesizes peer-reviewed studies published between 2020 and 2025 to examine emerging trends, dominant research methodologies, and persistent gaps in educational research. The analysis reveals a growing emphasis on artificial intelligence-driven studies, bibliometric analyses, qualitative methodologies, and researcher-practitioner collaboration. However, the literature also highlights limitations, including an overreliance on secondary data, limited exploratory studies involving human participants, and insufficient emphasis on evidence-based research. The review underscores the need for ethically grounded, methodologically rigorous, and context-sensitive educational research to strengthen the connection between theory, policy, and practice.

Keywords: *educational research, research methodology, artificial intelligence, qualitative research, evidence-based education*

1. Introduction

Educational research plays a central role in advancing teaching practices, informing policy decisions, and addressing complex learning challenges. In recent years, the field has undergone notable transformation due to the integration of digital technologies, particularly artificial intelligence (AI), alongside increased attention to research quality and methodological rigor. While these developments have expanded research possibilities, concerns persist regarding generalizability, ethical governance, and the practical relevance of findings.

Previous research has highlighted uneven research quality, limited practitioner engagement, and methodological weaknesses in close-to-practice studies (Wyse et al., 2021). At the same time, emerging methodologies—such as bibliometric analysis, Delphi techniques, autoethnography, and phenomenological approaches—have contributed to a more diversified research landscape. This review aims to critically examine contemporary educational

research by synthesizing recent empirical and theoretical studies, identifying dominant trends, methodological approaches, and key research gaps.

2. Methodology

This study adopts a narrative literature review approach, synthesizing 15 peer-reviewed journal articles published between 2020 and 2025. The included studies were selected based on their relevance to educational research methodologies, technological integration, and research–practice relationships. Data were extracted and analyzed thematically, focusing on research objectives, methodologies, samples, findings, and limitations. This approach allows for a comprehensive synthesis of diverse methodological perspectives and thematic areas within educational research.

3. Emerging Trends in Educational Research

3.1 Technological Integration and Artificial Intelligence

A significant trend in recent educational research is the increasing integration of AI and machine learning technologies. Studies on generative artificial intelligence emphasize its rapid adoption across disciplines and its implications for academic integrity, ethics, and governance (Pinho et al., 2025). Bibliometric analyses further demonstrate a sharp rise in AI-related publications, increased international collaboration, and thematic diversification (Ayanwale et al., 2024).

Empirical investigations into the use of ChatGPT for generating synthetic educational data reveal promising applications in simulating student responses, particularly in physics education (Kieser et al., 2023). However, these studies also raise ethical concerns related to data validity, bias, and the responsible use of proprietary AI systems.

3.2 Methodological Innovations

Recent literature reflects growing interest in methodological refinement and innovation. Delphi-based studies highlight the effectiveness of consensus-building techniques in educational research, particularly for identifying practitioner needs and systemic barriers (Oxley et al., 2025). Qualitative approaches, including autoethnography and phenomenological inquiry, contribute to enhanced trustworthiness and reflexivity, especially for early-career researchers (Chakma & Li, 2025; Aguas, 2022).

Post-qualitative and philosophy-as-method approaches challenge traditional research paradigms by emphasizing relational ethics, lived experience, and meaning-making (Yan et al., 2025). While these approaches enrich theoretical discourse, their limited empirical scope restricts broader generalizability.

3.3 Research and Practice Collaboration

The relationship between educational research and practice remains a central concern. Studies examining collaboration between researchers and teachers indicate that active practitioner involvement enhances knowledge mobilization and practical implementation (Opstoel et al., 2024). Nevertheless, evaluations of close-to-practice

research reveal that many studies lack strong theoretical grounding and methodological rigor (Wyse et al., 2021), limiting their long-term impact on educational practice.

3.4 Contextual and Discipline-Specific Research

Several studies emphasize the importance of contextual and discipline-sensitive research. Investigations into vocational education, physical education using virtual reality, mathematics education, and sustainable development demonstrate that educational interventions must be adapted to institutional, cultural, and disciplinary contexts (Compen et al., 2025; Bores-García et al., 2024; Hochmuth et al., 2025; Deroncele-Acosta et al., 2023). However, these studies are often constrained by small sample sizes and reliance on participant perceptions rather than direct observation.

4. Methodological Limitations in Existing Literature

Across the reviewed studies, bibliometric and qualitative methodologies dominate, with comparatively fewer large-scale experimental or longitudinal studies involving human participants. Common limitations include restricted generalizability, language bias favoring English-language publications, and limited emphasis on evidence-based evaluation. These issues highlight the need for more exploratory, mixed-method, and longitudinal research designs in educational research.

5. Research Gaps and Future Directions

The review identifies several critical gaps in the existing literature:

1. A scarcity of exploratory studies involving diverse human samples
2. Limited emphasis on evidence-based educational research
3. Insufficient longitudinal evaluation of research–practice collaborations
4. The need for adaptive ethical and governance frameworks for AI-driven research

Future research should prioritize methodological rigor, inclusivity, and translational impact to strengthen the relevance and credibility of educational research.

6. Implications and Recommendations for Future Research

6.1 Strengthen Human-Centered and Exploratory Research

Future educational research should prioritize exploratory and descriptive studies involving diverse human samples, including students, teachers, school leaders, and marginalized populations. Increasing the representation of real-world participants will enhance contextual validity and ensure that research findings more accurately reflect educational realities.

6.2 Promote Evidence-Based Research Practices

Researchers are encouraged to design studies grounded in evidence-based frameworks that directly link empirical findings to instructional strategies, policy decisions, and institutional practices. Greater emphasis should be placed on experimental, quasi-experimental, and longitudinal designs to assess causal relationships and long-term educational outcomes.

6.3 Enhance Methodological Rigor and Transparency

Educational research should adopt mixed-method and multi-method approaches where appropriate, combining quantitative rigor with qualitative depth. Clear reporting of research design, sampling procedures, data analysis strategies, and limitations is essential to improve replicability, credibility, and scholarly trust.

6.4 Develop Ethical and Adaptive AI Governance Frameworks

Given the rapid integration of artificial intelligence in educational research, adaptive ethical guidelines and governance frameworks must be established. Researchers should ensure transparency, academic integrity, data privacy, and bias mitigation when using AI tools, particularly generative AI systems, in data generation, analysis, and dissemination.

6.5 Encourage Researcher and Practitioner Collaboration

Stronger partnerships between researchers and practitioners should be fostered throughout all stages of the research process, from problem identification to dissemination. Co-designed research can improve knowledge mobilization, increase practical uptake, and bridge the persistent gap between educational research and classroom practice.

6.6 Increase Longitudinal and Impact-Oriented Studies

There is a need for more longitudinal studies that examine the sustained impact of educational interventions, technologies, and policies over time. Such research will contribute to a deeper understanding of effectiveness, scalability, and contextual adaptability.

6.7 Support Capacity Building for Early-Career Researchers

Institutions and funding agencies should provide targeted training in qualitative rigor, mixed-method research, and ethical research practices. Mentorship and methodological support can help early-career researchers manage complex data, ensure trustworthiness, and engage confidently in innovative research designs.

6.8 Broaden Global and Linguistic Representation

Future reviews and empirical studies should include non-English publications and research from underrepresented regions to reduce language and publication bias. Expanding global representation will contribute to more inclusive and culturally responsive educational knowledge.

7. Conclusion

Contemporary educational research is characterized by innovation, interdisciplinarity, and expanding methodological diversity. While advances in AI integration, qualitative methodologies, and collaborative research are evident, persistent challenges related to research quality, generalizability, and practical relevance remain. Addressing these challenges requires a stronger commitment to evidence-based, ethically grounded, and contextually responsive research practices.

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