A Review of Modern Educational Methodologies

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ABSTRACT

Methodological concepts are fundamental issues in educational research, concerning the scientific status and research quality of the discipline. This article, from a meta-educational perspective, systematically explores the connotations, historical shifts, and core characteristics of modern educational methodology. The study argues that modern educational methodology comprises three levels: philosophical foundation, logical strategy, and technical tools. Historically, it has undergone significant shifts, from imitating natural sciences to returning to the lived world, from pursuing grand narratives to focusing on micro-contexts, and from emphasizing disciplinary independence to moving towards interdisciplinary integration. It exhibits core characteristics such as pluralistic inclusiveness, reflective critical thinking, and practical generative nature. Faced with technological change and the demands of localization, educational methodology needs to construct a new paradigm that responds to the challenges of our time, guided by complex thinking.

INTRODUCTION

Core Concept: The distinction between method and methodology. Method refers to the specific operational procedures used in the research process, such as questionnaires, interviews, observation, statistical analysis, and experimental design. For example, if I want to understand the extracurricular learning situation of students in different schools, I can use a questionnaire; if I want to gain a deeper understanding of students' thoughts, I can use interviews. Methodology, on the other hand, is the theoretical study of methods, exploring the epistemological presuppositions and logical basis behind them (Ye Lan, 1999). Methodology includes ontology, epistemology, and the theory of knowledge.

From the perspective of conceptual history, the term "methodology" originates from the Western philosophical tradition. Descartes, in Discourse on the Method (1637), proposed "four rules," laying the foundation for modern scientific methodology. Kant, in Critique of Pure Reason (1781), elevated methodology to the level of philosophical reflection. In his Introduction to the Human Sciences (1883), Dilthey distinguished between the methodologies of the natural and human sciences.

However, modern educational methodology still faces profound dilemmas: "method-centrism" characterized by sophisticated methods but intellectual deficits (Wu Daguang, 2025); the triple rupture of qualitative research in terms of "principle, method, and application" (Wang Panfeng & Wu Zijing, 2025); the narrowing of evidence levels in evidence-based education (Biesta, 2020); the subversion of traditional research assumptions by the digital age (Zhao et al., 2025); and the marginalization of humanistic research by implicit positivism (Norris, 2024). How can we maintain a theoretical awareness of the uniqueness and complexity of educational practice while drawing on multidisciplinary methods? This is the core question this article attempts to address.

1.literature review

1.1.Current status of research abroad

A significant source of Western educational methodology research is the German tradition of pedagogy. In General Pedagogy (1806), Herbart attempted to lay the foundation for pedagogy with ethics and psychology, proposing the concept of "pedagogy as a science." Dilthey's methodology

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of spiritual science profoundly influenced German cultural pedagogy, and Spranger (1920) introduced "understanding" into educational research, emphasizing the characteristic of education as a form of spiritual life. From the mid-20th century onward, Breczinka, in Basic Concepts of Educational Science (1971), logically analyzed the conceptual system of pedagogy, distinguishing between educational science, educational philosophy, and educational practice, thus laying the conceptual foundation for educational research methodology. Benner, in General Pedagogy (1987), starting from the philosophy of practice, explored the normative foundation of pedagogy and proposed six basic structures of educational practice.

Anglo-American educational research methodologies have shown different development paths. Experimental pedagogy was inherited and developed in the United States, and Thorndike's (1904) educational measurement theory pushed quantitative methods to their extreme. In Experimental and Quasi-Experimental Designs (1963), Campbell and Stanley systematically discussed the methodological principles of educational experiments, becoming a classic in empirical educational research. After the 1970s, the qualitative research paradigm gradually emerged. Lincoln and Cuba, in Naturalistic Inquiry (1985), systematically elaborated on the paradigmatic foundation of qualitative research and proposed the evaluation criterion of "trustworthiness." Cresswell, in An Introduction to Mixed Methods (2003), presented mixed methods as a third research paradigm, proposing six types of mixed research designs and promoting methodological integration.

French educational sociology also made significant contributions to methodology. Durkheim, in Education and Sociology (1922), studied educational facts as "social facts," emphasizing the application of sociological methods in educational research. Bourdieu, in The Sense of Practice (1980), introduced the concept of "practicality logic," criticizing the binary opposition between objectivism and subjectivism, and advocating a "participatory objectification" research method, which has had a profound impact on educational research.

1.2. Current Status of Domestic Research

Although research on educational methodology in China started relatively late, it has developed rapidly. Ye Lan, in A Preliminary Exploration of Educational Research Methodology (1999), systematically discussed the philosophical foundations of educational research methodology, distinguishing between ontology, epistemology, and methodology, and proposing a basic framework for educational methodology research. She emphasized that education needs to "return to the things themselves," generating theory from educational practice and achieving "the interaction and generation of theory and practice." This idea has profoundly influenced the direction of educational research in China and is a cornerstone of modern teaching methodology. Chen Xiangming, in Qualitative Research Methods and Social Science Research (2000), comprehensively introduced the theoretical foundation, research design, data collection and analysis, and quality evaluation of qualitative research, and explored the localization of qualitative research in the context of Chinese culture. She emphasized the reflective nature of researchers, believing that researchers themselves are tools of research, and their preconceptions and experiences are precisely the starting point for understanding. This filled a gap in related research in China. Pei Dina's educational research methodology textbook system has contributed to the popularization of methodology. In her Introduction to Educational Research Methods (1995), Pei Dina systematically introduced the basic methods of educational research, including historical research, survey research, experimental research, and action research, playing a foundational role in cultivating researchers' methodological awareness.

In recent years, methodological research has shown new hot topics. Tian Xuehong (2010) systematically explored mixed research methods and, combining the latest international developments, proposed the application prospects of mixed research in Chinese educational research. Jin Shenghong (1997), starting from philosophical hermeneutics, explored the relationship between understanding and education, proposing the methodological implications of hermeneutic pedagogy. Complexity thinking has also begun to enter the field of educational research methodology. Some scholars have proposed that the education system is a complex system, requiring transcendence of linear thinking and the adoption of holism, dynamic thinking, and situational thinking (Ye Lan, 1999).

1.3.Summarize

While domestic and international research on educational methodology differs in its approach, they all point to the disciplinary awareness of education and the multi-faceted integration of methods. The German tradition emphasizes the foundations of the humanities and the construction of normative frameworks; the Anglo-American tradition focuses on the systematization of methods and paradigm evolution; the French tradition emphasizes the uniqueness of education as a social fact; and Chinese research, while drawing on international achievements, actively explores localized paths. These studies converge from different paths to a profound inquiry into educational research methodology: how can we maintain a theoretical awareness of the uniqueness and complexity of educational practice while drawing on methods from multiple disciplines?

However, a review of existing research reveals that modern educational methodology still faces multiple deep-seated dilemmas. First, research has fallen into the paradox of "method-centrism," with increasingly sophisticated methods but insufficient intellectual contribution, and much research becoming a "variable game," squeezing the space for the growth of original theories (Wu Daguang, 2025). Second, qualitative research faces a triple fracture of "principle, technique, and application"—insufficient theoretical contribution, lack of normative procedures, and lack of practical effectiveness (Wang Panfeng & Wu Zijing, 2025). Third, the evidence-based education movement has elevated randomized controlled trials to the "gold standard," leading to a narrowing of the evidence hierarchy and an inability to address the contextual sensitivity and value-ladenness of educational practice (Biesta, 2020). Fourth, the rapid iteration of artificial intelligence is eroding the stability assumptions of traditional research, requiring a shift in methodology from linear causal thinking to a dynamic systems understanding (Zhao et al., 2025). Furthermore, implicit positivism has marginalized humanities-oriented research, such as the philosophy of education (Norris, 2024), while the Western-centric methodological framework still dominates global academic discourse, necessitating breakthroughs in local theoretical construction (Wang Panfeng & Wu Zijing, 2025).

How to respond to these challenges and promote breakthroughs in educational research methodology across dimensions such as intellectual depth, practical concern, technological change, and local construction is the core issue this study attempts to address.

2.Problems with Modern Teaching Methodology

2.1.The hegemony of positivism and "method worship"

In pursuit of "scientific rigor," educational research has become overly obsessed with methods while neglecting the problems themselves, leading to a phenomenon known as "methodolatry" — researchers often choose a method first and then seek out a problem, rather than having the problem drive the method selection (Thomas, 2022). This results in methodology being narrowed down to technical operations, losing the critical dimension of theoretical reflection.

2.2.Qualitative-Quantitative Paradigm Wars and False Integration

Educational research has long been caught in a binary opposition between qualitative and quantitative paradigms. Although mixed research methods are touted as a "third paradigm," in practice they often degenerate into a simple superposition of methods rather than a true paradigm integration (Maxwell, 2021). The fundamental differences between qualitative and quantitative research at the ontological and epistemological levels have not been truly resolved.

2.3.The dilemma of the evidence-based education movement: hierarchy of evidence and context-detachment

The Evidence-Based Education movement champions randomized controlled trials (RCTs) as the "gold standard," but this leads to a narrowing of the level of evidence — difficult-to-quantify cultural contexts, teachers' tacit knowledge, and the uniqueness of educational situations are excluded from "valid evidence" (Biesta, 2020). There is a fundamental tension between the contextual sensitivity of educational practice and the universal pursuit of scientific methods.

2.4. The fundamental rupture between theory and practice

Educational research methodology has long faced a "theory-practice" binary split: academic research is becoming increasingly refined and professional, yet increasingly distant from real educational practice; teachers are reduced to "data sources" for research subjects, rather than participants in knowledge production (Cochran-Smith & Lytle, 2023). Although action research attempts to bridge this gap, it remains marginalized in the academic evaluation system.

2.5. The erosion of the humanistic aspect of education by technological rationality

Driven by performance-based and technical rationality, educational research has excessively focused on measurable and quantifiable "effects," obscuring the difficult-to-measure dimensions of education: meaning, value, ethics, and existence (Biesta, 2021). While the methodological tools of educational research have become increasingly sophisticated, the pursuit of the fundamental question of "what constitutes good education" has weakened.

2.6. The Challenges of Postmodern Thought: A Methodological Legitimacy Crisis

Postmodernism's deconstruction of meta-narratives has shaken the legitimacy of educational research methodologies. If knowledge is essentially a product of power construction, is the pursuit of "truth" and "objectivity" in educational research still meaningful? This question remains unresolved (Popkewitz, 2020).

2.7. The Methodological Tension Between Globalization and Localization

Educational research methodology has long been dominated by Western centrism. Theoretical frameworks originating from the European and American context have been applied uncritically to Global South countries, leading to a methodological "colonialism." How to develop "indigenous methodologies" that adapt to local cultural contexts while drawing on international methods remains an unsolved problem (Smith, 2021).

3. Suggestions for coping with modern teaching methodologies

3.1. Beyond "Method-Centricity": Establishing the Dominant Role of Ideas in Research

To address the paradox of "methodical sophistication versus intellectual deficit," researchers should move beyond blindly worshipping methods and establish the dominant role of ideas in research. Wu Daguang (2025) proposed the core argument that "ideas are the 'methods' that transcend research methods," emphasizing that ideas should always be dominant, with methods following closely behind, rather than the other way around. Specifically: First, research design should derive methods from the problem itself, allowing methods to serve the research problem, rather than letting existing methods define the problem; second, the originality of the problem and the space for theoretical growth should not be sacrificed in pursuit of complex models and detailed variables; third, the academic community should resolutely reject quantitative research that lacks theoretical innovation and cannot respond to real-world problems, reversing the academic trend of prioritizing methods while neglecting intellectual depth. Professor Marsh, when discussing innovation in educational research methods, also emphasized that "problem + method" is the primary principle driving continuous innovation in educational research (Wang Chenya et al., 2025).

3.2. Promoting the Standardization and Theorization of Qualitative Research

To address the triple dilemma of qualitative research in education — the knowledge dilemma of insufficient theoretical contributions, the methodological dilemma of lacking standardized procedures, and the value dilemma of lacking social utility (Wang Panfeng & Wu Zijing, 2025)—improvements should be made in the following aspects: First, at the level of "principle," qualitative research should not merely remain at the level of empirical description, but should grasp the process and mechanism of educational activities through educational phenomena, rising from specific cases to general theories, and refining and forming new concepts and propositions. Second, at the level of "procedure," the standardization of research procedures should be strengthened, theoretical sampling rather than convenience sampling should be adopted in the selection of

subjects, and a complete chain of evidence and scientific logical clues should be presented in data analysis. Third, at the level of "application," the practical transformation capability of research should be enhanced, so that the results of qualitative research can respond to and guide real educational practices.

3.3. Developing a〝Systemic Paradigm Oriented Towards Practical Improvement〞

To address the fundamental disconnect between educational research and practical improvement, Zhang Yu, Liu Huiqin, and Shi Zhongying (2021) proposed a 〝systemic paradigm oriented towards practical improvement〞 as a solution. The core tenets of this paradigm include: ontologically acknowledging the unity, openness, autonomy, and complex dynamics of educational practice; epistemologically emphasizing embodiedness, contextuality, and wholeness; methodologically advocating for school-based educational research models, the construction of an 〝academic-practice community,〞 comprehensive research methods, and systematic collection of research materials; and introducing 〝practical improvement〞 as a new dimension for academic evaluation. This paradigm requires top-level design of the relationship between the educational practice system and educational research, enhancing the comprehensive capabilities of professionals, and innovating academic evaluation standards, thereby truly realizing the guiding role of research in practical improvement.

3.4. Reconstructing Evidence-Based Methodology: Beyond the Narrowing of Evidence Levels

To address the problem of the narrowing of evidence levels in the evidence-based education movement, the evidence-based methodology should be reconstructed, acknowledging the legitimacy of diverse evidence types. Biesta (2020) points out that treating randomized controlled trials as the "gold standard" ignores the contextual sensitivity and value-ladenness of educational practice. Therefore, a more inclusive view of evidence should be established: First, recognizing the legitimate status of teachers' tacit knowledge, practical wisdom, and cultural context within the evidence system; second, emphasizing methodological heterogeneity and the uniqueness of the research context in meta-analysis and systematic reviews,

avoiding mechanical merging (Pasikowski, 2025); and third, developing comprehensive research methods that can integrate quantitative and qualitative evidence, so that evidence-based education truly serves complex educational practices.

3.5. Responding to Methodological Challenges in the Digital Age

In response to the fundamental challenges posed by artificial intelligence to educational research methodology, Zhao et al. (2025) proposed a paradigm shift in educational research from linear causal thinking to a dynamic systems understanding. Specific suggestions include: First, acknowledging the erosion of research stability assumptions by the rapid iteration of AI technology, and instead adopting more flexible, iterative research designs; second, shifting the focus from stable "processing effects" to understanding dynamic "human-machine-life" interaction systems; third, developing new research methods capable of capturing learning process data and multimodal interactions; and fourth, achieving an epistemological transformation from human-centered explanations to human-machine symbiosis. Liu Fuxing and Liu Yuan (2026) also pointed out that educational research in the digital age must respond to profound ontological reconstructions such as "the digitization of human life states," "the transformation of educational relationship structures," and "the transformation of meaning construction models."

3.6. Overcoming "Implicit Positivism": Restoring a Diverse Methodological Ecosystem

Addressing the marginalization of humanities-oriented research, such as educational philosophy, due to "implicit positivism," Norris (2024) proposes reaffirming the legitimate status of philosophical research in educational research. Specific countermeasures include: First, explicitly incorporating philosophical research paradigms into research methods and textbook writing, changing the narrow presupposition that "educational research = empirical research"; second, promoting the American Educational Research Association's (AERA) *Standards for Reporting Humanities-Oriented Research*, providing a standardized review basis for humanities-oriented educational research; third, rethinking the connotation of the word "research," including reading, writing, and thinking as legitimate forms

of research; and fourth, acknowledging the knowledge contributions of philosophical research in academic evaluation, avoiding using "practical impact" as the sole criterion. Hamid (2025) also calls for methodological pluralism, advocating that researchers make prudent methodological choices based on research questions rather than paradigmatic dogma.

3.7. Promoting Global Dialogue and Local Construction of Methodology

Addressing the issues of Western centrism and insufficient localization in methodological research, Wang Panfeng and Wu Zijing (2025) proposed a research path of "using China as a method." This path requires: first, using China as a theoretical tool for understanding, evaluating, and analyzing educational issues, rather than merely as a research object and field space; second, rooting itself in Chinese educational practice, directly addressing major issues in Chinese educational reform, using Chinese culture as a value benchmark, and revealing the cultural connotations of educational activities through dialogue with classical theories; and third, extracting universally applicable theoretical concepts from Chinese local experience to contribute Chinese wisdom to the global educational knowledge system. Sun Bin (2024), based on a bibliometric analysis of Chinese educational research paradigms over the past decade, also found that researchers' methodological awareness in constructing local theories is increasing, and they should further root themselves in local educational issues to build a methodological system with Chinese characteristics.

Conclusion

Standing at the third decade of the 21st century, technological change, the demand for localization, and complexity thinking are reshaping the landscape of educational methodology with unprecedented force. Big data and artificial intelligence are upgrading research tools, but also triggering an epistemological crisis of "dataism." Localization requires researchers to reflect on the applicability boundaries of Western methodologies and develop theories from local educational practices. Complexity thinking demands moving beyond linear reductionism and constructing a research framework capable of grasping the overall characteristics of the education

system. These three challenges are intertwined, collectively calling for the integration and innovation of methodologies. Looking to the future, educational methodology needs to find a balance between openness and adherence, innovation and inheritance. Openness means accepting new technologies, methods, and ideas; adherence means upholding research norms and methodological foundations; innovation means developing new methods based on tradition; inheritance means respecting and learning from the wisdom of predecessors. Only in this way can educational research truly respond to the call of the times and move towards a more mature disciplinary consciousness through multi-faceted integration.

The ultimate concern of educational research methodology has always been the pursuit of "good education." Regardless of how methods evolve or how technology changes, the fundamental mission of educational methodology has never changed: to provide a reliable cognitive path for understanding education, improving education, and achieving human development. This is also the ultimate aim of this study.

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