

# **EDUCATIONAL RESEARCH** **PERSPECTIVES AND PRACTICES**

Editor

**Dr. Dhriti Tiwari**  
**Dr Azkiya Waris**



# **EDUCATIONAL RESEARCH PERSPECTIVES AND PRACTICES**

**Dr. Dhriti Tiwari**  
Assistant Professor  
Faculty of Education  
Integral University, Lucknow

**Dr. Azkiya Waris**  
Associate Professor  
Faculty of Education  
Integral University, Lucknow



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## Foreword

Education in the twenty-first century operates within a rapidly transforming landscape shaped by technological innovation, interdisciplinary expansion, socio-political shifts, and increasing ethical scrutiny. In such a context, educational research must move beyond routine methodology toward deeper conceptual clarity, methodological sophistication, and social responsibility. This volume emerges as a timely and significant contribution to that evolving discourse.

The work reaffirms the foundational understanding of educational research as a systematic and transformative enterprise. Research in education is not an abstract academic exercise; it directly informs teaching practices, curriculum development, institutional governance, assessment systems, and policy decisions. By revisiting the nature and scope of educational inquiry, the volume establishes a strong conceptual grounding that anchors the discussions that follow.

A major strength of this book lies in its methodological breadth. The thoughtful engagement with qualitative inquiry, mixed-methods research, and interdisciplinary perspectives reflects an awareness that educational realities are complex and multifaceted. The volume is particularly responsive to contemporary shifts in research design and technological integration. Discussions on gamification, simulation, artificial intelligence, and machine learning highlight the expanding horizons of educational research. These innovations offer powerful tools for data generation and analysis, yet the text carefully balances enthusiasm with critical reflection. Issues of bias, transparency, data ethics, and validity are addressed with seriousness, reinforcing the principle that technological advancement must remain grounded in human values and academic integrity.

Ethical reflection forms a consistent thread throughout the volume. In an era of digital data proliferation and algorithmic influence, maintaining public trust in research has become increasingly vital. The book underscores the need for reflexivity, accountability, and responsible knowledge production. It reminds readers that educational research carries societal implications and must therefore be conducted with heightened ethical awareness.

Another notable contribution of this volume is its engagement with broader questions of knowledge, sustainability, and global responsibility. By situating educational research within discussions of governance, policy, and the Sustainable Development Goals, the book extends its relevance beyond academia. It presents scholarship not as an isolated pursuit but as a meaningful contributor to equitable and sustainable societal development.

Despite addressing diverse themes, the chapters are organised with clarity and intellectual progression. In a time when education faces unprecedented complexity, research must remain rigorous, reflective, and socially responsive. This book exemplifies that commitment. I commend the editors and contributors for their scholarly dedication and trust that this work will stimulate continued dialogue, innovation, and responsible inquiry within the field of education.

A handwritten signature in blue ink, reading "AMITA BAJPAI", is written above a long, sweeping horizontal line that underlines the signature.

**Prof. (Dr.) Amita Bajpai**  
**Former Dean and Head**  
**Department of Education**  
**University of Lucknow**

# Preface

Educational research continues to evolve in response to profound transformations in knowledge systems, technological infrastructures, socio-political dynamics, and ethical expectations. As education increasingly intersects with issues of sustainability, governance, digitalisation, and global responsibility, research in this field must move beyond methodological routine toward greater conceptual clarity, interdisciplinary engagement, and ethical reflexivity. This edited volume is conceived within this global scholarly context and brings together a set of carefully curated chapters that collectively examine the foundations, methodologies, innovations, and responsibilities shaping contemporary educational research.

The volume opens with *Nature and Scope of Educational Research*, which establishes a conceptual grounding by examining education as a systematic and scientific endeavour aimed at informed change. By clarifying the meaning, characteristics, and applications of educational research, the chapter positions research as a vital instrument for improving teaching practices, curriculum design, evaluation systems, and policy formulation.

Building on this foundation, *Qualitative Research in Education: A Method* explores the philosophical orientations and methodological contours of qualitative inquiry. It highlights the value of qualitative approaches in understanding educational contexts, experiences, and processes, while demonstrating their relevance for both theory development and educational practice. Complementing this discussion, *Qualitative Research Tools in Education: From Data Generation to Interpretive Analysis* focuses on the practical and epistemological dimensions of qualitative tools. It examines data generation techniques, analytic strategies, and criteria for rigour, emphasising reflexivity, ethical sensitivity, and contextual understanding in the construction of meaning.

The methodological dialogue is further extended in *Challenges and Opportunities in Conducting Mixed-Methods Research in Education*, which critically examines the integration of quantitative and qualitative

approaches. This chapter highlights mixed-methods research as a powerful framework for addressing complex educational phenomena, enhancing validity through triangulation, and producing more comprehensive and nuanced interpretations.

Moving beyond methodological boundaries, *Harnessing the Power of Interdisciplinary Research in Education: Insights from Namo Studies* presents an interdisciplinary model that integrates education with governance, public policy, cultural studies, and leadership research. The chapter illustrates how interdisciplinary inquiry can enrich curriculum design, foster civic engagement, and expand the horizons of educational research, while also reflecting on challenges related to academic neutrality and methodological coherence.

Innovation in research design forms the focus of *Gamification and Simulation in Research Design: Innovations from Foundations to Future Frontiers in Educational Research*. Grounded in established learning theories, this chapter examines how gamified and simulated environments can enhance engagement, data richness, and experiential understanding. It critically evaluates digital tools and platforms while addressing ethical, methodological, and validity-related concerns associated with immersive research designs.

The growing influence of computational intelligence is examined in *Artificial Intelligence and Machine Learning in Educational Research: Applications, Challenges, and Ethical Considerations*. This chapter analyses how AI and ML are reshaping educational research through personalised learning systems, predictive analytics, and intelligent tutoring, while foregrounding issues of bias, transparency, data governance, and human-centred design.

Ethical inquiry occupies a central place in the volume through *Research Ethics in the Digital Age: Foundations and Emerging Dilemmas*. This chapter traces the evolution of research ethics and examines both enduring and emerging challenges intensified by digitalisation and artificial intelligence. It underscores the necessity of continuous ethical reflexivity to sustain academic integrity and public trust.

Theoretical engagement with educational experience is advanced in *The Prismatic Classroom: A Theoretical Inquiry into Qualitative Experiences*

*in Education*. Drawing on phenomenological and constructivist perspectives, the chapter conceptualises educational spaces as sites of refracted meaning, shaped by physical, social, and digital environments. It critically interrogates hidden curricula, power relations, and digital mediation, advocating for dialogic, inclusive, and agency-oriented educational designs.

In *The Function of Knowledge Production Today: Current Issues in Politics*, the volume broadens its analytical lens to examine the relationship between knowledge, power, and politics in the contemporary world. The chapter interrogates misinformation, algorithmic bias, and the commodification of knowledge, calling for renewed commitments to critical reasoning, academic rigour, and democratic information systems.

Curricular concerns are addressed in *Sustainable Curriculum Design: Balancing Knowledge, Skills, and Values*, which argues for a transformative approach to curriculum development grounded in sustainability principles. The chapter emphasises interdisciplinary learning, value education, and action competence as essential for preparing learners to engage with global challenges.

The social purpose of educational research is foregrounded in *Socially Responsible Educational Research in Pursuit of the Sustainable Development Goals: Bridging Scholarship, Society, and Global Commitments*. This chapter situates educational research within global sustainability agendas, highlighting the roles of institutions, leadership, and methodological innovation in fostering equity, participation, and societal relevance.

The volume concludes with *Integrating Technology to Strengthen Educational Research: Opportunities and Challenges*, which critically examines the role of digital tools in enhancing research planning, data analysis, collaboration, and dissemination. While recognising the transformative potential of emerging technologies, the chapter also addresses concerns related to access, ethics, and researcher preparedness.

Taken together, this volume presents a multidimensional and internationally relevant perspective on educational research. It bridges foundational theory with methodological innovation, ethical responsibility, and global engagement. Intended for researchers, teacher

educators, doctoral scholars, and policy-oriented academics, the book seeks to contribute meaningfully to international debates on the evolving purposes, practices, and possibilities of educational research in the twenty-first century.

**Dr. Dhriti Tiwari**

**Dr. Azkiya Waris**

# Indexing

Sr. No		Page. No
1.	Nature and Scope of Educational Research	1 - 12
2.	Qualitative Research in Education: A Method	13 -30
3.	Qualitative Research Tools in Education: From Data Generation to Interpretive Analysis	31 - 49
4.	Challenges and Opportunities in Conducting Mixed-Methods Research in Education	50 - 65
5.	Harnessing the Power of Interdisciplinary Research in Education: Insights from Namo Studies	66 - 91
6.	Gamification and Simulation in Research Design: Innovations from Foundations to Future Frontiers in Educational Research	92 - 125
7.	Artificial Intelligence and Machine Learning in Educational Research: Applications, Challenges, and Ethical Consideration	126 - 133
8.	Research Ethics in the Digital Age: Foundations and Emerging Dilemmas	134 - 156
9.	The Prismatic Classroom: A Theoretical Inquiry into Qualitative Experiences in Education	157 - 171
10.	The Promise of Arts-Based and Visual Research: Plural Epistemologies Across Global Trends and Indian Pathways	172 - 193
11.	The Function of Knowledge Production Today: Current Issues in Politics	194 - 208
12.	Sustainable Curriculum Design: Balancing Knowledge, Skills, and Values	209 - 225
13.	Socially Responsible Educational Research in Pursuit of the Sustainable Development Goals: Bridging Scholarship, Society, and Global Commitments	226 - 246
14.	Integrating Technology to Strengthen Educational Research: Opportunities and Challenges	247 - 256

## **Integrating Technology to Strengthen Educational Research: Opportunities and Challenges**

**Dr. Shaista Ateeque**

*Faculty of Education*

*Assistant Professor,*

*Integral University, Lucknow*

### **Abstract**

*This chapter explores the role of technology in strengthening educational research, highlighting both its opportunities and challenges. It begins with a conceptual understanding of educational technology and its connection to research effectiveness. The evolution of technology in research is examined, from traditional methods to modern digital tools that support planning, data collection, analysis, and dissemination. The chapter discusses the opportunities offered by technology, including increased accuracy, efficiency, wider reach, collaboration, and innovative methodologies such as big data and learning analytics. At the same time, it addresses challenges such as the digital divide, ethical concerns, and the need for researcher training. Best practices and strategies are outlined to integrate technology thoughtfully, maintain ethical standards, and combine traditional and digital methods for stronger research outcomes. Finally, future trends such as AI, virtual reality, blockchain, and global collaboration are considered, emphasizing the importance of preparing the next generation of researchers with technological literacy. Overall, the chapter highlights how thoughtful and responsible use of technology can enhance the quality, relevance, and impact of educational research.*

**Keywords:** Educational Research, Educational Technology, Data Analysis, Research Methodology, Emerging Technologies