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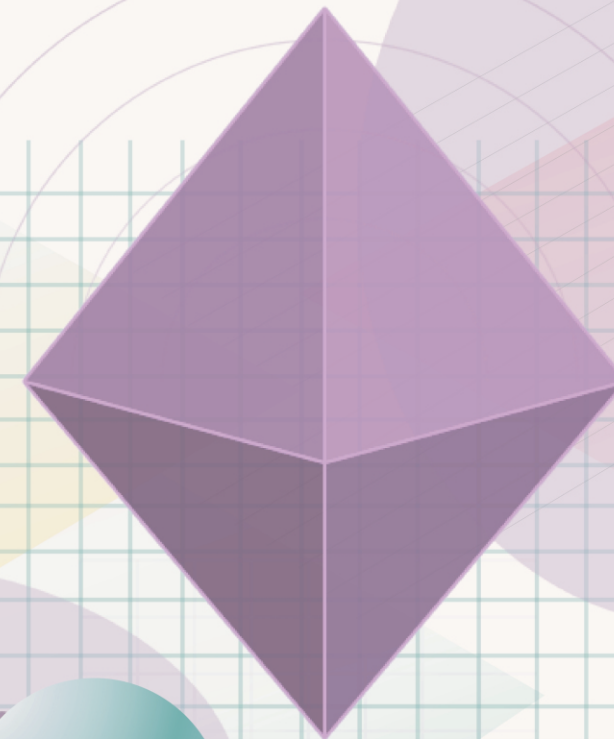
MODERN MATHEMATICS EDUCATION: PEDAGOGY, TECHNOLOGY AND LEARNER WELL-BEING

DR. MINARA YEASMIN

2026

MODERN MATHEMATICS EDUCATION

Pedagogy, Technology
and Learner Well-being



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Editor

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PREFACE

Mathematics has long been perceived as a subject of barriers - barriers of fear, of access, of relevance, and of pedagogy. For too many learners, it remains a gatekeeper rather than a gateway. Now, Mathematics education is at a crossroads. As educators, researchers, and policymakers, we recognize that traditional approaches often fail to engage learners or address their emotional and cognitive needs. *Modern Mathematics Education: Pedagogy, Technology and Learner Well-being* brings together cutting-edge perspectives on three urgent themes namely Innovative Teaching in Mathematics, Reducing Mathematics Anxiety and AI/Technology in Mathematics Education to build the field ready.

Part 1: Innovative Teaching in Mathematics explores new strategies, curricula, and classroom practices that make mathematics meaningful and accessible.

- Nabin Thakur's "A Meta-Analysis of Mathematics-Driven Approaches for Enhancing Conceptual Understanding in Biology" highlights interdisciplinary connections.
- Shreyasi Pal's "The Impact of Pattern Recognition as a Pedagogical Tool..." demonstrates action research in senior secondary classrooms.
- Dr. Sukanta Koner's "The Innovative Teaching Practice and Metacognitive Awareness..." aligns with NEP 2020 goals.
- Md. Tabish Kamran's "Impact of Pattern Recognition as a Pedagogical Tool..." reinforces pattern recognition's role in engagement.
- Sandipan Basu et al.'s "From Pebbles to Petabytes" chronicles computational tools' evolution.

Part 2: Reducing Mathematics Anxiety confronts the affective barriers that block learning and offers pathways to build confidence and belonging.

- Dr. Sabiruddin Molla & Saba Sulata's "Reducing Mathematics Anxiety Through Activity-Based..." offers experiential strategies.
- Dr. Maganlal S. Molia's "Causes, Symptoms, And Practical Solutions..." provides actionable insights.
- Dr. Somnath Roy's "Understanding Math Fear..." unpacks mindset and environment impacts.
- Dr. Suman Sur's "Learn, Fun and Burn Fear in Mathematics..." links learning styles and anxiety.

- Md Wasim Akram & Dr. Prakriti Ranjan Sarkar's *Reducing Mathematics Anxiety and Promoting Psychological Well-Being: A Qualitative Study*, tried to explore the strategies through which students can reduce mathematics anxiety to maintain psychological well-being.
- Other contributors explore math anxiety in nursing, secondary schools, and qualitative interventions.

Part 3: AI/Technology in Mathematics Education examines how tools like adaptive platforms, simulations, and AI tutors are transforming what, how, and where we learn.

- Asif Ul Rehman's "Strengthening Mathematics Education in India..." discusses NEP-2020 digital reforms.
- Dr Pasala Srinivasa Rao's "Artificial Intelligence in Mathematics Education..." nullifies achievement gaps.
- Other contributors explore AI's transformative role, TPACK perspectives, and math foundations of AI/ML.
- I hope this book sparks dialogue, inspires innovation, and strengthens our collective commitment to mathematics education that empowers every learner.

Minara Yeasmin

Editor

Kolkata, April, 2026.

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Heartfelt thanks are due to all the contributing authors whose scholarship, dedication, and timely responses enriched each chapter. We also acknowledge the reviewers, colleagues, scholars and students whose insights and feedback shaped the volume. Finally, we express gratitude to the publishing team for their professionalism and meticulous effort in bringing this work to print.

Minara Yeasmin
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Kolkata, April 2026.

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