ABOUT THE EDITOR

Dr. Minara Yeasmin is presently working as an Assistant Professor in the Department of Education at Aliah University, Kolkata, West Bengal, India. She has 12 years of teaching experience at undergraduate and postgraduate level. She completed her Ph.D. in Education from the University of Calcutta, West Bengal, India. She also holds M.Sc. in Applied Mathematics and B.Sc. Honours in Mathematics from the same university. In addition, she has completed M.Ed. and B.Ed. from University of Calcutta and qualified UGC CSIR NET in Mathematical Science. She has published 55 papers in academic journals of national and international repute, authored 3 books and edited 5 books in her area of specialization. She has also acted as a resource person in many national and international conferences, seminars and workshops.

ABOUT THE SOUTH ASIAN ACADEMIC PUBLICATIONS

South Asian Academic Publications (SAAP) is a leading and innovative book publishing service provider for academicians and research scholars. Through our outstanding combination of expertise, methods, and industry-specific knowledge, we provide effective solutions to academic and publishing challenges. We specialize in handling content related to Science, Technology, and Medicine, and are also well-versed in Humanities and Social Sciences. South Asian Academic Publications is an initiative driven by young and energetic professionals, and we also address various issues, particularly in scientific writing.

South Asian Academic Publications
3-37, Dirisavancha, Kanigiri, Prakasm District
Andhra Pradesh-523445 India
Email- saapbooks@gmail.com
http://www.saap.org.in/

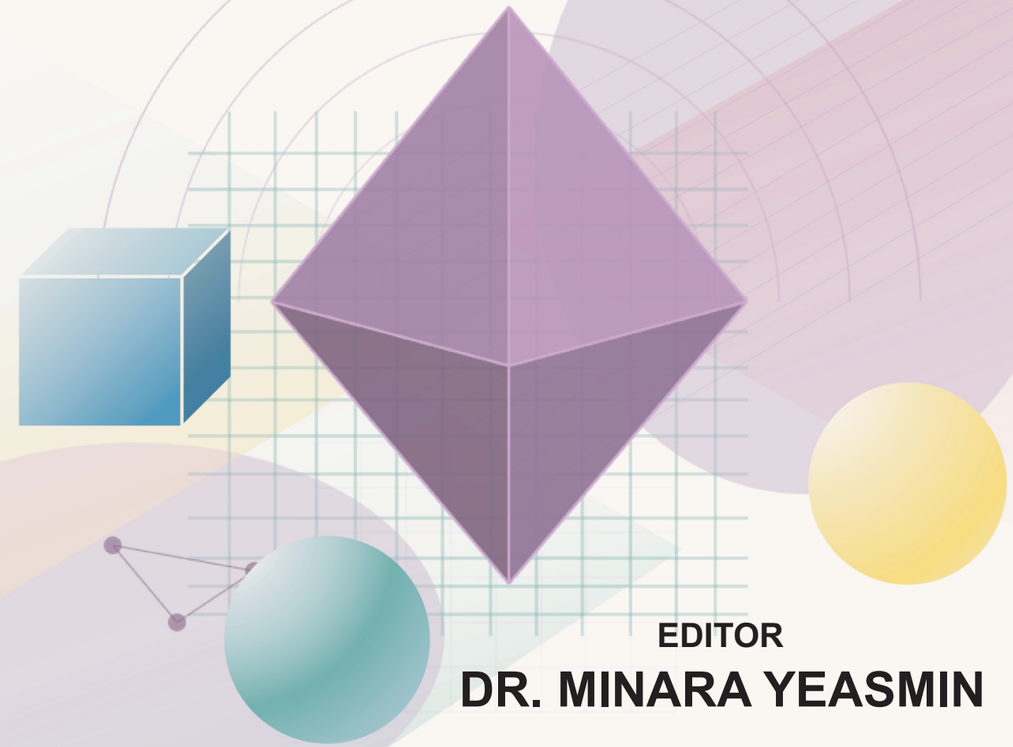
ISBN 939215392-9

DOI: https://doi.org/10.37022/saap/book.47

MODERN MATHEMATICS EDUCATION: PEDAGOGY, TECHNOLOGY AND LEARNER WELL-BEING DR. MINARA YEASMIN 2026

MODERN MATHEMATICS EDUCATION

Pedagogy, Technology and Learner Well-being



EDITOR
DR. MINARA YEASMIN

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

Editor

Dr. Minara Yeasmin

Assistant Professor, Department of Education
Aliah University, West Bengal, India.

Catalysed and Sponsored by

Department of Education, Aliah University
&
Department of Science & Technology and Biotechnology,
Government of West Bengal.

2026

SOUTH ASIAN
ACADEMIC PUBLICATIONS

Published By:
South Asian Academic Publications
3-37, Dirisavancha, Kanigiri, Prakasm District
Andhra Pradesh-523445 India
Phone No. - 9959049730
Email - saapbooks@gmail.com

Editor: Dr. Minara Yeasmin

South Asian Academic Publications is a leading innovative book Publisher Service provider for Academicians and Research Scholars. Through our outstanding combination of personalities, methods, and industry-specific expertise, we perform simple solutions to economic difficulties. We are specialists in handling content narrated to Sciences, Technical and Medicine and are also familiar with Humanities and Social Sciences content. South Asian Academic Publications is an initiative by youthful & energetic experts and we also solve various issues especially Scientific Writing.

Publication Year: 2026

Pages: 173

ISBN: 978-93-92153-92-1

DOI : https://doi.org/10.37022/saap/book.47

Price: Rs.499/-

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 though 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.

ACKNOWLEDGEMENT

The editor and contributors gratefully acknowledge the support received in bringing out this edited volume, Modern Mathematics Education: Pedagogy, Technology and Learner Well-being.

We extend our sincere thanks to Aliah University, Kolkata, especially **Prof. Dr. Rafikul Islam,** Hon'ble Vice Chancellor, Aliah University and **Dr. Md. Abdul Khan,** Registrar, Aliah University, **Dr. Sk. Ashfaque Ali,** Deputy Registrar, Aliah University, Dean of Faculty of Humanities and Languages and HoD, Dept. of Education for providing the academic environment, institutional encouragement, and infrastructure that made this collaborative work possible.

We are deeply indebted to the Department of Science & Technology and Biotechnology (DSTBT), Government of West Bengal for the financial assistance under Popularisng Science / Grant Order No. 309/BS/O/Estt/IM - 38/2025 Date 12/03/2026 and to **Department of Science & Technology and Biotechnology, Government of West Bengal** for their patronage. Their commitment to advancing mathematics education and research has been instrumental in realizing this book.

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
Editor
Kolkata, April 2026.

CONTENTS