BREAKING BARRIERS

STRATEGIES TO CLOSE THE GENDER GAP IN STEM EDUCATION

Nur Choiro Siregar, Ph.D.
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PREFACE

The persistent gender gap in science, technology, engineering, and mathematics (STEM) education and careers remains a critical challenge in the 21st century. Despite decades of progress in educational access and policy reform, women and girls continue to be underrepresented in STEM fields across the globe. This book, Breaking Barriers: Strategies to Close the Gender Gap in STEM Education, was conceived as a response to that challenge—a call to action for educators, policymakers, researchers, and advocates committed to creating equitable opportunities in STEM for all.

The journey toward gender equity in STEM is complex and multifaceted. It is shaped by cultural norms, institutional practices, access to resources, societal expectations, and individual perceptions. This book explores these intersecting factors, drawing on a robust body of interdisciplinary research and case studies from diverse contexts. It aims to illuminate not only the barriers that exist but also the evidence-based strategies that have proven effective in dismantling them.

This book contains Understanding the barriers; Changing mindsets; Creating inclusive learning environments; Role models and mentorship; Leveraging technology and innovation; Policy and institutional support; and Engaging parents and communities. By highlighting various barriers to STEM education from 100 articles from around the world, this book serves as both a scientific resource and a practical guide for readers.

Our hope is that this volume inspires reflection, dialogue, and—most importantly—action. Closing the gender gap in STEM is not only a matter of equity but also a necessity for global innovation and sustainable development. We invite you to engage with the insights shared here and to contribute to the collective work of breaking barriers and building a more inclusive future.

Nur Choiro Siregar

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BIOGRAPHY

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