

# THE FOURTH INDUSTRIAL REVOLUTION

RE-ENGINEERING THE FUTURE OF EDUCATION

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## Preface

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The rapid onset of the Fourth Industrial Revolution (IR 4.0) has brought about significant changes across various sectors, particularly in education. This volume delves into the multifaceted impact of IR 4.0 on education, offering insights and strategies for navigating this transformative era.

This book begins with an overview of IR 4.0 and its implications beyond the current landscape. The first section addresses general issues, focusing on how education systems can be framed within the context of this revolution. It explores policies, practices, and the necessary support systems to prepare students, educators, and future leaders for the challenges and opportunities presented by IR 4.0. Additionally, it examines the development of global learning communities and the importance of citizenship education in this new era.

The second section focuses on discipline-specific issues, highlighting the transformation needed in various educational domains. The chapters in this section cover the integration of emerging technologies in ESL learning, innovative approaches to science laboratories, and the redesign of mathematics education to align with the demands of IR 4.0. Furthermore, it discusses about enhancing STEM learning, entrepreneurial education, computational thinking, and the development of essential skills within the engineering curricula to prepare graduates for the evolving workforce.

This book serves as a comprehensive guide for educators, policymakers, and stakeholders who are keen to understand and engage with the challenges and possibilities of education in the IR 4.0. It is hoped that the insights provided will contribute to the ongoing discourse on the future of education and the essential transformations required to thrive in this dynamic and complex era. This book was made possible by numerous research grants provided by Universiti Kebangsaan Malaysia and the Ministry of Higher Education (MOHE) as follows:

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