

# **The Impact of ChatGPT on Higher Education**

This page intentionally left blank

# The Impact of ChatGPT on Higher Education: Exploring the AI Revolution

BY

**CAROLINE FELL KURBAN**

*MEF University, Turkey*

AND

**MUHAMMED ŞAHİN**

*MEF University, Turkey*



United Kingdom – North America – Japan – India – Malaysia – China

Emerald Publishing Limited  
Emerald Publishing, Floor 5, Northspring, 21-23 Wellington Street, Leeds LS1 4DL

First edition 2024

Copyright © 2024 Caroline Fell Kurban and Muhammed Şahin.  
Published under exclusive licence by Emerald Publishing Limited.

**Reprints and permissions service**

Contact: [www.copyright.com](http://www.copyright.com)

No part of this book may be reproduced, stored in a retrieval system, transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise without either the prior written permission of the publisher or a licence permitting restricted copying issued in the UK by The Copyright Licensing Agency and in the USA by The Copyright Clearance Center. Any opinions expressed in the chapters are those of the authors. Whilst Emerald makes every effort to ensure the quality and accuracy of its content, Emerald makes no representation implied or otherwise, as to the chapters' suitability and application and disclaims any warranties, express or implied, to their use.

**British Library Cataloguing in Publication Data**

A catalogue record for this book is available from the British Library

ISBN: 978-1-83797-648-5 (Print)

ISBN: 978-1-83797-647-8 (Online)

ISBN: 978-1-83797-649-2 (Epub)



INVESTOR IN PEOPLE

# Contents

Dedication	<i>vii</i>
About the Authors	<i>ix</i>
Foreword	<i>xi</i>
Preface	<i>xiii</i>
Acknowledgements	<i>xv</i>
<b>Chapter 1 Exploring ChatGPT's Impact on Higher Education – A Case Study</b>	<b>1</b>
<b>Chapter 2 Navigating the Landscape of AI Chatbots</b>	<b>7</b>
<b>Chapter 3 Theoretical Framework for Investigating ChatGPT's Role in Higher Education</b>	<b>29</b>
<b>Chapter 4 Exploring ChatGPT's Role in Higher Education: A Literature Review</b>	<b>41</b>
<b>Chapter 5 Research Methodology</b>	<b>75</b>
<b>Chapter 6 Findings and Interpretation</b>	<b>93</b>
<b>Chapter 7 Ethical Implications</b>	<b>133</b>
<b>Chapter 8 Product Implications</b>	<b>147</b>
<b>Chapter 9 Educational Implications</b>	<b>153</b>

<b>Chapter 10 Contributions to Knowledge and Research</b>	<i>181</i>
Appendices	<i>195</i>
References	<i>207</i>

*We dedicate this book to the memory of Dr İbrahim Arıkan, the founder of MEF Schools and MEF University, who dedicated his life to revolutionising education. Dr Arıkan's ultimate dream was to establish MEF University as a fully flipped university, but sadly, he passed away before witnessing its realisation. He was a pioneer across all stages of education, from kindergarten to university, and believed in a democratic approach to education that prioritised the individuality of each student.*

*Dr Arıkan implemented full academic independence for teachers at his institutions, and his commitment to creating a learning environment that nurtures the potential of every student has left a lasting impact on the field of education. His spirit lives on in the hearts and minds of every student and teacher who had the privilege to know him. As we continue to honour his legacy, we are proud to say that MEF University has become the realisation of his dream, an innovative and fully flipped university that empowers students to take control of their education and become lifelong learners.*

*We believe that Dr Arıkan would have been proud of the innovative direction MEF University is taking by incorporating cutting-edge technologies like ChatGPT to further enhance the teaching and learning experience. As a pioneer in education, he always believed in implementing new and effective teaching methods to provide his students with the best possible education. His spirit continues to inspire us to strive for excellence in education, and we dedicate this book to his memory.*

This page intentionally left blank

## About the Authors

**Caroline Fell Kurban** is an academic, educator and consultant with a diverse educational background, including a PhD in Applied Linguistics, MA in Technology and Learning Design, MSc in Teaching English to Speakers of Other Languages and BSc (Hons) in Geology. Her expertise in flipped learning and contributions to publications on digital teaching and learning have been instrumental in advancing initiatives at MEF University in Istanbul. As the principal investigator, Caroline's extensive background and prior studies have influenced the selection of theoretical frameworks for this investigation of ChatGPT integration in education. Her expertise in Clayton Christensen's Theory of Jobs to be Done, critical examination of power dynamics through theorists like Bourdieu and Marx and understanding of phenomenology through Heidegger's philosophy bring a comprehensive perspective to her research. With her credentials and passion for enhancing educational practices, she is well-suited to lead this project.

**Muhammed Şahin**, an esteemed academic leader, holds a geomatics engineering degree from Istanbul Technical University (ITU) and earned his master's degree from University College London in 1991 and a PhD from the University of Newcastle in 1994. He joined ITU as an Assistant Professor in 1994 and climbed the ranks to become a tenured Professor in 2002. Şahin's remarkable career includes serving as the Rector of ITU from 2008 to 2012 and later as the founding rector at MEF University, the pioneering institution fully based on the flipped learning methodology in which this research is located. With esteemed leadership roles in various organisations, substantial contributions to research and strategic management and influential work in engineering education, his expertise spans diverse domains. However, his current passion and dedication revolve around educational transformation, especially with regard to the impact that technologies are having on reshaping learning experiences and empowering students for the future. He strongly believes that the experiences derived from this transformation should be shared with others, which is what prompted the development of this book.

This page intentionally left blank

# Foreword

In the dynamic and ever-evolving landscape of education, one of the most profound shifts is the integration of emerging technologies. As an advocate for access to high-quality education for all, I find this era of technological advancement an intriguing period of transformation. This book dives deep into the exploration of artificial intelligence (AI) in education, specifically focusing on AI chatbots like ChatGPT, and the implications they bring to our learning environments.

My pleasure in presenting the foreword for this book is twofold. Firstly, because the authors have undertaken a rigorous exploration of a critical topic. Secondly, because this subject resonates with my professional journey, spent in pursuit of improving student outcomes and democratising access to quality education.

MEF University in Istanbul, the book's focal research site, stands as a beacon of innovation for its integration of AI, offering a unique context for this study. The authors critically examine ChatGPT, discussing its development, the ethical considerations surrounding its use, and the need for a globally inclusive discourse on the ethical guidelines for AI technologies.

From my tenure as US Under Secretary of Education to leading the American Council on Education, I have seen the impact that a conscientious integration of technology can have on access to high-quality education. In this book, by delving into the history and ascent of chatbots, formulating a theoretical framework for evaluating AI's influence, conducting a contemporary literature review and embarking on an exploratory case study, the authors shed light on how AI chatbots have the potential to reshape the very foundations of teaching and learning.

What the authors present is not just a well-researched treatise on ChatGPT, but a tool for future exploration. The book's concluding chapters provide a blueprint for how to effectively and ethically integrate these AI technologies in our classrooms and institutions, a guide I wish I had when piloting early edtech initiatives in my own career.

The insights gleaned from this book go beyond ChatGPT. They will shape how we, as educators, policymakers, and students, navigate the rapidly changing technological landscape of education. The authors have not only provided a comprehensive exploration of AI chatbots in education but also prompted us to consider how we can harness this technology to create an equitable and inclusive future for all learners.

*xii Foreword*

In the grand scheme of things, the integration of AI in education is a new frontier. This book stands as an essential guide for all those venturing into this new territory. We stand on the precipice of a new era in education – an era where AI can help us achieve our shared goals of equity, excellence and accessibility in education.

Let us not just read this book but act on its insights to ensure a future where all learners have access to quality education.

*Ted Mitchell*

President of the American Council on Education

# Preface

It is my pleasure to introduce our new book, *The Impact of ChatGPT on Higher Education: Exploring the AI Revolution*. As the founding rector of MEF University in Istanbul, Turkey, I am proud to say that our institution has always been at the forefront of innovative and cutting-edge approaches to education.

Since our establishment in 2014 as the world's first fully flipped university, we have been dedicated to providing our students with the skills they need to succeed in their future careers. However, we also recognise that the landscape of education is constantly evolving, and we must adapt our methods accordingly. That is why, in this book, we are excited to share our exploration of how ChatGPT may affect the roles of students, instructors and institutions of higher education.

Our university has always been a pioneer in the use of technology in education. We were early adopters of the flipped learning approach, which has now become widely recognized as an effective pedagogical method. We were also at the forefront of using digital platforms with adaptive learning capabilities to provide our students with personalised and individualised learning experiences.

As we embrace new technologies and innovative approaches to education, the potential of AI in education using ChatGPT is both exciting and promising. However, it is crucial to thoroughly explore and understand how this technology will impact students, instructors and universities themselves. Moreover, universities will have a vital role to play in the global discourse of AI as it rapidly transforms various aspects of our lives.

This book presents an in-depth analysis of our institution's exploratory case study, investigating the potential effects of ChatGPT on various stakeholders. Through the sharing of experiences, anecdotes and perspectives from various practitioners' viewpoints, our goal is to offer a glimpse into the transformations occurring within our organisation. This endeavour can serve as a useful reference for other institutions seeking to undertake similar inquiries. We are excited to be at the forefront of this discourse and to contribute to the progress of knowledge in this field.

*Muhammed Şahin*  
Rector of MEF University

This page intentionally left blank

## Acknowledgements

In creating this book, we have been fortunate to receive significant support, assistance and inspiration. We are profoundly grateful to all who contributed. Our students, especially Levent Olcay, Utkan Enis Demirelgi, Nida Uygun and Mehmet Oğuzhan Unlu, brought invaluable enthusiasm and insights to the project. We would also like to acknowledge the diligent assistance of our student volunteer, Muhammet Dursun Şahin. We are deeply thankful to the İbrahim Arıkan Education and Scientific Research Foundation, a guiding light in our pursuit of educational excellence, and the MEF University faculty, whose creative ideas and persistent motivation were indispensable. We express our gratitude to Professor Muhittin Gökmen, Director of the Graduate School of Science and Engineering and the Chairman of the Department of Computer Engineering at MEF. His valuable insights concerning AI theorists like Tegmark, Marcus, Davis and Russell greatly enriched our understanding. Additionally, we extend our appreciation to Professor Mustafa Özcan, Dean of the Faculty of Education at MEF, for his continuous feedback and unwavering support throughout the duration of this project. We owe a debt of gratitude to Paker Doğu Özdemir and his team at the MEF CELT, along with the MEF Library staff, especially Ertuğrul Çimen and Ertuğrul Akyol, for their tireless support and valuable contributions. Our heartfelt thanks also go to our colleagues, including Ted Mitchell, whose thoughtful foreword frames our work; Leonid Chechurin, for his astute critique; and Juliet Girdher, whose expertise on Heidegger enriched our understanding of AI through a Heideggarian lens. We also extend our appreciation to the members of our AI think tank, Errol St Clair Smith, Thomas Menella, Dan Jones and Juli Ross-Kleinmann whose thoughtful discussions helped shape our ideas. Finally, we express our sincere gratitude to Emerald Publishing for making this book possible. In essence, this book is a testament to the strength of collaborative effort and the pursuit of knowledge. Each of you has enriched our work, leaving an indelible mark that we will forever appreciate. Thank you.