

Detailed Table of Contents

Preface..... xiii

Acknowledgment xx

Chapter 1

A Systematic Review of Augmented Reality in Music Education 1

Zhang Xuejing, Universiti Sains Malaysia, Malaysia

Wan Ahmad Jaafar Wan Yahaya, Universiti Sains Malaysia, Malaysia

In recent years, the application of Artificial Intelligence (AI) and Augmented Reality (AR) in music education has shown great potential to promote personalised, interactive and immersive teaching methods. However, current research on AI and AR in music education lacks a systematic analysis of their independent roles and cross-fertilisation. This study aims to comprehensively sort out the current research status, hotspots and development trends of AI and AR in music education through the methods of systematic literature review and bibliometric analyses. The literature will be classified into three categories; AI and music education, AR and music education, and AI and AR in music education. The results will reveal the main application scenarios of AI and AR in music education and challenges of their combination in education. The review will provide academic references to explore the future direction of AI and AR in music education, and provide practical insights for innovation in digital music teaching and learning.

Chapter 2

Advantages and Disadvantages of Access to ChatGPT Among University

Students: A Systematic Literature Review..... 23

Tahani R. K. Bsharat, Universiti Sains Islam Malaysia, Malaysia

*Ismail Sheikh Ahmad, International Islamic University Malaysia,
Malaysia*

Zuheir Khlaif, An Najah National University, Palestine

This chapter explores the advantages and disadvantages of university students using ChatGPT, an AI-powered chatbot. By synthesizing existing research, it aims to provide a comprehensive understanding of the topic. Using thematic analysis, the study identifies key themes: the benefits of ChatGPT, its drawbacks, and its potential integration into university education. The findings suggest that ChatGPT enhances learning experiences, offers personalized support, and promotes self-directed learning. However, concerns such as overreliance on AI, ethical issues, and privacy challenges

are also highlighted. The chapter emphasizes the need for further research to address these issues and guide effective integration into academic settings.

Chapter 3

AI-Powered ChatGPT in Education: A Double-Edged Sword 47

Rahul Joshi, Manav Rachna International Institute of Research and Studies, Haryana, India

Suman Kumari, Manav Rachna International Institute of Research and Studies, Haryana, India

Krishna Pandey, Manav Rachna International Institute of Research and Studies, Haryana, India

The advent of AI in education provides new resources with the potential to revolutionize how we teach and learn. This chapter thoroughly summarizes artificial intelligence (AI) technologies, their possible uses in education, and the challenges that arise from using them. Researchers examine chatbots and similar algorithms that can mimic human interaction and create writing that reads naturally given linguistic input. While innovative chatbots like ChatGPT have many benefits, they also present significant ethical and practical concerns when used in the classroom. The chapter aims to promote AI's responsible and ethical use in education by providing insightful information on how AI may be effectively introduced into the educational context to benefit instructors and students.

Chapter 4

Animal Species Explorer Scanimals: An AI Integrated Mobile Application for Young Learners 75

Anusha Achuthan, Universiti Sains Malaysia, Malaysia

Catherine Lam Pui Kiew, Universiti Sains Malaysia, Malaysia

Galib Muhammad Shahriar Himel, Universiti Sains Malaysia, Malaysia

Teaching children about animals is a fundamental aspect of early childhood education and is universally valued across different cultures and societies. Understanding animals fosters a sense of curiosity and wonder in young minds, encouraging them to explore the natural world and enhance their comprehension of the interdependence of life on our planet. Picture books, flashcards, stories, songs, and animal toys are some of the traditional ways that kids are introduced to animals. These resources make learning interesting and enjoyable for kids. However, if AI can be deployed for the enhancement of the current method, it can benefit the overall educational system. To make that a reality, "Scanimals" aims to introduce a novel and engaging educational experience for children through a mobile application focused on terrestrial animals. The main objective of this project is to establish an interactive learning and image recognition-based digital platform to help young learners gain a greater grasp of the animal kingdom (terrestrial animal) in this digital age of technology.

Chapter 5

Challenges and Acceptance of AI Integration in Classroom Learning: A Preliminary Study	111
<i>Nurul Maziah Mohd Barkhaya, Universiti Sains Malaysia, Malaysia</i>	

The potential of artificial intelligence (AI) in fostering inclusive education, especially in classroom learning, is well-documented by current educational trends. This study aims to explore students' acceptance of AI in higher education as a preliminary investigation. It identifies the challenges faced from the students' perspectives. Data will be collected through interviews with three students enrolled in instructional technology course, focusing on their experiences and acceptance levels. Thematic analysis will be used to uncover recurring themes and patterns in the interview transcripts. Expected findings include a diverse range of student attitudes, with some highlighting the enhanced learning opportunities and personalization provided by AI. Overall, this research addresses fostering the inclusivity of AI among students to create an effective learning environment.

Chapter 6

Creating Immersive Learning Experiences in Education Domain Through Virtual and Augmented Reality	123
<i>Manpreet Kaur Riyat, Lovely Professional University, India</i>	
<i>Ruchi K. Kakkar, Lovely Professional University, India</i>	
<i>Amit Kakkar, Lovely Professional University, India</i>	

This chapter examines the transformation of education with Virtual and Augmented Reality (VR and AR), highlighting their remarkable capability to create immersive learning experiences that significantly enhance student engagement and knowledge retention. AR and VR technologies, with their interactive and dynamic interfaces, overcome traditional educational challenges, thereby enhancing the inclusivity and personalisation of learning. The chapter analyses the current state of the education system, presents use cases of AR and VR in education, and discusses the steps to incorporate AR and VR into educational settings for immersive learning experiences. As AR and VR progress, their integration into education offers substantial prospects to connect theoretical knowledge with practical implementation, establishing these technologies as crucial catalysts for the future of learning.

Chapter 7

Digital Tools to Support Executive Functioning for Persons With Attention-Deficit Hyperactivity Disorder	157
<i>Terri Jackson, University of Prince Edward Island, Canada</i>	

Lagging executive functioning skills are common amongst individuals diagnosed with ADHD (Adler et al., 2017; Ustun et al., 2017) and research indicates, these

skill deficits can make the activities of daily living challenging (Loe et al., 2007). Many assistive technology and artificial intelligence tools can support executive functioning. This chapter explores how emotional regulation, organizational skills, sustained attention, and working memory can be enhanced through the use of assistive technology and artificial intelligence. When used effectively, Summit, Headspace, Goblin Tools, Motion, Positive Feedback Bot, Speechify, TickTick, and Bear can raise, reinforce, and consolidate executive functioning skills in persons diagnosed with ADHD thereby fostering independence, confidence, and self-efficacy.

Chapter 8

Exploring the Application of Immersive Virtual Reality in English Speaking Instruction for Chinese College Students 185

Meng Huan, Universiti Sains Malaysia, China

Mageswaran Sanmugam, Universiti Sains Malaysia, Malaysia

This study explores the application of immersive virtual reality (VR) in English speaking instruction for Chinese university students. With the continuous development and popularity of immersive VR, education based on this technology has emerged as a new field. As an internationally recognized language, English is widely used and promoted globally, making the learning of English speaking crucial for students' development. Therefore, utilizing immersive VR holds significant practical value for enhancing the quality and effectiveness of English speaking instruction.

Chapter 9

Facilitating English Language Teaching Through AI-Based Drama in Palestine 217

Tahani R. K. Bsharat, International Islamic University Malaysia, Malaysia

Ismail Sheikh Ahmad, International Islamic University Malaysia, Malaysia

Artificial Intelligence (AI) has the potential to significantly reshape the landscape of education through the integration of AI-powered tools, personalized learning algorithms, and virtual and augmented reality. In a study exploring the integration of AI-based drama in English language teaching in Palestine, a cohort of 43 teachers from both governmental and private schools participated in a questionnaire-based assessment. The survey sought to capture their perspectives on AI, AI-based drama techniques, the impact of AI in EFL classrooms, and the challenges associated with its implementation. Utilizing SPSS (V. 23), descriptive statistics, independent sample t-tests, and ANOVA tests were employed to analyze the data. The findings revealed a prevailing optimism among the participating educators, indicating their confidence in the potential of AI to enhance the EFL teaching and learning experience. Furthermore, the teachers identified financial and technical hurdles as the primary

challenges. The findings underscore the imperative for comprehensive teacher training programs focused on effectively integrating AI tools in EFL education.

Chapter 10

Managing Output Risks From Imperfect LLMS 249

Mageswaran Sanmugam, Universiti Sains Malaysia, Malaysia

James Boldiston, Universiti Sains Malaysia, Malaysia

Large Language Models (LLMs) like ChatGPT are powerful tools for generating well-written content quickly, but their inner workings are opaque, leading to concerns about the accuracy of their outputs. These models don't actually “think”; they use statistical methods to generate language, creating a “black box” where the reasoning behind their outputs is unclear. This can lead to plausible but factually incorrect content being mistaken for accurate information. Instead of expecting LLMs to explain their reasoning, users should approach their outputs critically, recognizing that speed doesn't guarantee accuracy. Human validation is essential to mitigate the risks associated with LLMs, ensuring that their content is used safely and effectively.

Chapter 11

Redefining Learning Experiences With Virtual and Augmented Reality:

Creating Engaging Learning Environments Through Immersive Technologies 277

Seema Yadav, Bhopal School of Social Sciences, India

The integration of immersive technologies such as Virtual Reality (VR), Augmented Reality (AR), and Extended Reality (XR) is reshaping educational paradigms by offering immersive, interactive, and contextually rich learning environments. These technologies are pivotal in cultivating critical 21st-century skills like critical thinking, self-directed learning, and teamwork, bridging theoretical knowledge with practical application. This article synthesizes insights from various studies highlighting the transformative potential of VR and AR in education. Despite their promising benefits, challenges such as cost, accessibility, and pedagogical integration remain critical considerations. By fostering an environment conducive to their ethical and impactful deployment, educational institutions can prepare students for success in a digitally-driven world. The article concludes by advocating for a balanced approach that leverages technological advancements while prioritizing thoughtful implementation to maximize educational outcomes.

Chapter 12

The Role of Using ChatGPT in Improving the Creative Writing of English Language Students From the Perspectives of Instructors and Postgraduate Students 301

Khaled N. Yaseen, An-Najah National University, Palestine

Khaled Dweikat, Al-Quds Open University, Palestine

This study investigates the role of ChatGPT in enhancing the creative writing skills of English language students from the perspectives of instructors and postgraduate students at Palestinian universities. Using a mixed-methods research design, the researchers employed both quantitative and qualitative descriptive analytical approaches, including questionnaires and interviews for data collection. The study population consisted of 89 instructors and 169 postgraduate students. Quantitative data were analyzed using SPSS V.23, while qualitative data were analyzed thematically. The findings indicate that both instructors and doctoral students have positive perspectives on ChatGPT's role in improving creative writing. The study also found a high level of implementation of ChatGPT as an AI tool in higher education for creative writing enhancement. No statistically significant differences were observed among participants' perspectives.

Chapter 13

X-Raying ChatGPT Potentials for Sustainable Library and Information Science Research 349

Yusuf Ayodeji Ajani, University of Ilorin, Nigeria

Adeyinka Tella, University of Ilorin, Nigeria

Oluwole O. Durodolu, University of South Africa, South Africa

This paper explores the potential applications of ChatGPT, an advanced language generation model developed by OpenAI, in sustainable research within the field of Library and Information Science (LIS). ChatGPT has attracted attention due to its ability to generate text that resembles human language and engage in interactive conversations, making it a valuable tool for LIS researchers. Previous studies have demonstrated its effectiveness in assisting librarians with reference queries and enhancing user experiences. However, some ethical concerns and challenges must be carefully addressed to ensure the responsible and sustainable utilization of ChatGPT. These include addressing biases, ensuring information accuracy, promoting ethical use, protecting user privacy, and improving explainability. This paper discusses the benefits of integrating ChatGPT into various aspects of LIS research, such as information retrieval, knowledge organization, user interaction, collaboration, and decision-making. It emphasizes the importance of considering ethical considerations and proposes future directions for integration, such as domain-specific training, knowledge base integration, collaboration, ethical guidelines, evaluation methodologies, user-centred design, and interdisciplinary collaboration.

By embracing these directions, ChatGPT can be effectively integrated into sustainable LIS research, driving advancements in the field and empowering researchers to address the complex challenges of the evolving information landscape.

Compilation of References	363
About the Contributors	423
Index.....	431