

## Chapter 6

# Teachers and Schools Navigating Virtual Worlds and the Metaverse for Enhanced E-Learning: Evaluating an E-Capacity Model Approach

**Richard Adade**

 <https://orcid.org/0000-0001-8006-1302>

*University of South Africa, South Africa*

**Leila Goosen**

 <https://orcid.org/0000-0003-4948-2699>

*University of South Africa, South Africa*

### ABSTRACT

*The purpose of the study reported on in this chapter is evaluating teachers' and schools' capacities to integrate technologies into a new educational curriculum using an e-capacity model approach. Against the background of navigating virtual worlds and the metaverse for enhanced e-learning, the chapter will discuss issues with regard to effective strategies and policies for digital integration in education and training, societal issues (social inequality and the digital divide, etc.), legal and ethical issues (intellectual property legislation, etc.), the hybridization of training (hybrid, Hy Flex, co-modal, etc.), simulations, artificial intelligence (AI) for training, the educational metaverse, and information and communication technologies (ICTs).*

### INTRODUCTION

This section will describe the general perspective of the chapter and end by specifically stating the aim and objectives.

DOI: 10.4018/979-8-3693-1034-2.ch006

## **Navigating Virtual Worlds and the Metaverse for Enhanced E-Learning**

### **Artificial Intelligence and Blockchain for Training**

The revitalizing power of ‘*digital learning*’ stems from the wide range of digital tools that it provides and that training professionals must master. As a result, educational players today have unprecedented opportunities to capitalize on collaborative platforms, *blockchain for training*, deep learning, serious games, learning analytics, rapid learning, virtual classes/videoconferencing, mobile learning, and educational technologies being used for an Information and Communication Technologies for Development (ICT4D) Massive Open Online Course (MOOC) in the 21st century or growing innovative e-schools as part of a community engagement project. The digital transformation of education is accelerating thanks to these digital tools, and teaching is now investing in the educational metaverse. Because of the effects of technological advancements (Ansu-Kyeremeh & Goosen, 2022), learners can be immersed in appropriate environments that will aid in their learning processes. In line with the goal of this book, that of the chapter is to contribute as researchers to share their experiences with *Artificial Intelligence (AI) for training* and the metaverse, digital learning, the tools it provides, as well as new practices to adopt.

### **Evaluating Teachers and Schools Integrating Technologies into a New Educational Curriculum Using an E-Capacity Model Approach**

Information and communications technologies (ICTs) had been delineated from completely different viewpoints. ICTs describe the methods, equipment and software used in the production, storage, processing, transmission, and management of information. It includes a range of digital instruments, connections, and devices that make information collection, organization, distribution and utilization easier (International Society for Technology in Education (ISTE), 2023). With ICTs, complex and difficult content had been made easy to understand, and through group or collaborative learning experiences, students grasp and master concepts with ease. As a result, current reforms in education demand that teachers and schools must implement some sort of technology in their classrooms by integrating it into their pedagogies during lessons. However, both schools and teachers find it difficult “to do so due to inadequate ICT facilities” (Mwenisongole, 2021, p. 215) in schools (Radwan, Razak, & Ghavifekr, 2019). Additionally, the scarcity of continuous professional development for teachers is also considered to be a barrier to classroom implementation of such educational reforms (Polikoff & Porter, 2014).

In accordance with a report by Wallet and Melgar (2015) for the United Nations Educational Scientific and Cultural Organization (UNESCO) Institute for Statistics, ICTs significantly affect how many organizations go about their everyday business, promoting efficiency, communication, and innovation across a range of industries. In the current digital era, it had developed into a crucial component for organizational accomplishment. The combination of data processing and communicational technologies will help schools and teachers towards coming up with and developing instructional technologies (Manichander, 2015).

According to Talukder, Alam and Apu (2015), ICTs assist the user to obtain access to a lot of information easily through interactions with mobile devices and other advanced technologies. It encompasses the internet, as well as internet technologies like Wi-Fi, projectors, cell phones, and other mediums for communication. ICTs also include personal computers, operating systems and application software,

17 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/chapter/teachers-and-schools-navigating-virtual-worlds-and-the-metaverse-for-enhanced-e-learning/340104](http://www.igi-global.com/chapter/teachers-and-schools-navigating-virtual-worlds-and-the-metaverse-for-enhanced-e-learning/340104)

## Related Content

---

### The Impact of Personal Learning Environments on Chinese Junior High School Students' Spoken English Narrative Competence

Menglin Zhang, Xiaoshu Xu and YunFeng Zhang (2023). *International Journal of Virtual and Personal Learning Environments* (pp. 1-23).

[www.irma-international.org/article/the-impact-of-personal-learning-environments-on-chinese-junior-high-school-students-spoken-english-narrative-competence/329599](http://www.irma-international.org/article/the-impact-of-personal-learning-environments-on-chinese-junior-high-school-students-spoken-english-narrative-competence/329599)

### Student Satisfaction and Preferences Related to Virtual Streaming Facilities During the COVID-19 Lockdown

Micheal M. van Wyk and Samuel Amponsah (2022). *International Journal of Virtual and Personal Learning Environments* (pp. 1-21).

[www.irma-international.org/article/student-satisfaction-and-preferences-related-to-virtual-streaming-facilities-during-the-covid-19-lockdown/285595](http://www.irma-international.org/article/student-satisfaction-and-preferences-related-to-virtual-streaming-facilities-during-the-covid-19-lockdown/285595)

### Student and Teacher Assessment of Digital Education During the COVID-19 Pandemic and After: The Case of Cadi Ayad and Sultan Moulay Slimane Universities

Rachid Agliz (2024). *Navigating Virtual Worlds and the Metaverse for Enhanced E-Learning* (pp. 234-246).

[www.irma-international.org/chapter/student-and-teacher-assessment-of-digital-education-during-the-covid-19-pandemic-and-after/340110](http://www.irma-international.org/chapter/student-and-teacher-assessment-of-digital-education-during-the-covid-19-pandemic-and-after/340110)

### Intelligent Tutoring Systems: Best Practices

Aytürk Keleş and Ali Keleş (2011). *Intelligent Tutoring Systems in E-Learning Environments: Design, Implementation and Evaluation* (pp. 1-26).

[www.irma-international.org/chapter/intelligent-tutoring-systems/45539](http://www.irma-international.org/chapter/intelligent-tutoring-systems/45539)

### Knowledge Management for Agent-Based Tutoring Systems

Ping Chen and Wei Ding (2005). *Designing Distributed Learning Environments with Intelligent Software Agents* (pp. 146-161).

[www.irma-international.org/chapter/knowledge-management-agent-based-tutoring/8184](http://www.irma-international.org/chapter/knowledge-management-agent-based-tutoring/8184)