


# Chapter 2

## Navigating Paradoxes: The Double-edged Impact of Digital Technology on Education

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### **ABSTRACT**

*This work explores the dual nature of digital technologies in education, highlighting both their transformative potential and the challenges they pose. While digital transformation enhances teaching and learning through tools such as artificial intelligence, cloud computing, big data, and the Internet of Things, it also amplifies issues like the digital divide and social inequality. It critically examines how these technologies reshape educational practices, emphasizing their capacity to drive innovation, engagement, and efficiency. However, successfully integrating digital tools requires educators and learners to navigate the digital landscape with critical thinking, responsibility, and efficacy, maximizing benefits while mitigating drawbacks. Drawing on global case studies, it underscores the need for inclusive strategies that balance technological advancements with equity and access. Ultimately, the chapter advocates for collaborative efforts among stakeholders to foster an equitable, inclusive, and future-ready educational ecosystem.*

### **1. INTRODUCTION: THE DUALITY OF DIGITAL EDUCATION**

Digital transformation has profoundly impacted nearly every sector since the 1980s. In recent years, globalization has intensified the pressure on businesses to adapt to the digital era. These changes extend beyond the company level, transforming the environment, society, and institutions (Kraus et al., 2021), including

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educational systems (Kaplan & Haenlein, 2016). This shift has rapidly increased, especially following the outbreak of COVID-19 in March 2020 (Dhawan, 2020; Rodríguez-Abitia & Bribiesca-Correa, 2021; Rof, 2022). Due to social distancing recommendations, digital technologies played a special role in ensuring the continuity of social and economic activities. In fact, they were perceived as a “panacea” in this time of global crisis (Dhawan, 2020). During the pandemic, with varying lockdown measures across countries, people worldwide had to work, study, engage in leisure activities, and communicate with colleagues, friends, and family members using digital technologies from their homes (Watson et al., 2021).

On May 5th, 2023, the head of the UN World Health Organization (WHO) declared that COVID-19 was no longer a public health emergency (WHO, 2023). By this time, society had adapted to new ways of living and working. People realized that productivity was achievable while working and studying from home. The expression “new normal”, as widely reported in the media and public discourse, emerged to describe the significant changes that permeated almost all aspects of personal and professional life. These experiences have altered how people shop, travel, work, study, communicate, and spend time with friends and family (Clipper, 2020; Díaz-García et al., 2023). Consequently, organizational and institutional leaders must adjust their business strategies to align with the evolving digital reality, seamlessly integrating operations and approaches to remain competitive and succeed (Hensellek, 2020; Montasser et al., 2023; Reis, 2028).

In the education sector, the effects of the COVID-19 pandemic were particularly profound and far-reaching. The sudden shift to what is often referred to as “emergency remote teaching” or “forced digitalization” enabled schools and higher education institutions to maintain educational opportunities for their students during periods of mandatory social distancing and lockdown measures (Cook et al., 2023; Rof et al., 2022). This continuity was made possible largely through the integration of digital technologies, underscoring their pivotal role in education.

Educators and students transformed parts of their houses into “classrooms.” Teachers would teach by looking at cameras, and students would learn and interact with them through screens (Capelo, 2022). It was an entirely new paradigm, and individuals navigated it differently without any preparation (Hodges et al., 2020). Some had adequate internet access, devices, and digital literacy, while others struggled with limited resources and skills (UNESCO, 2023b). Initially, educators relied on commercial platforms and existing digital tools. Over time, new digital technologies and educational platforms emerged (Pashkov & Pashkova, 2022).

At its core, education is a form of communication, and the advent of the internet, digital devices, and digital platforms has revolutionized this process, offering new channels that expand the possibilities for delivering and accessing educational content. Digital platforms and virtual spaces now function as vital facilitators of

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