

# Chapter 5

## Empowering Citizens: Preparing for the Future of Digital Literacy and AI in Education

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### **ABSTRACT**

*We are in a landscape characterized by the rapid advancement of technology and education. This transformation's hub is the connection between digital literacy and artificial intelligence (AI). Within a short period, educators, policymakers, and our society have come to the realization that AI will play a central role in their lives. This chapter explores the critical imperatives of preparing citizens for a future where digital competencies and AI fluency are advantageous and could be central to survival. The authors examine the current global landscape and how nations integrate digital literacy and AI into their educational framework to foster more adaptive and innovative societies. This discussion will then focus on local initiatives, illustrating how these global trends can be tailored to meet individual communities' specific cultural, economic, and societal needs.*

### **INTRODUCTION**

In 2022, a significant global movement responded to the rise of artificial intelligence. This wave of digital transformation will affect education, work, and daily life. Central to this shift is the rapid integration of AI into systems that make de-

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cisions or solve problems (Wang et al. 2024). Although it may boost productivity, AI's infiltration into various sectors may challenge education. As AI becomes more widespread, substantial digital literacy skills will be essential for citizens to navigate a complex, tech-driven world (Nu et al. 2021). Historically, digital literacy has been connected to basic computer skills. However, "New Literacy Studies" extends these boundaries by emphasizing the skills and strategies needed for new technologies and media forms (Pahl & Rowsell, 2005). "Critical Literacy" further underscores the importance of questioning media origins and content producers (Jowallah, 2015). While these literacy areas are valuable, the authors argue that unique digital literacy is essential for digital transformation. This literacy should encompass understanding algorithms, data privacy, health, and safety in AI, which are critical for global educational reform. Ensuring people can engage with innovation is part of this mission.

This chapter will address the crucial need to prepare citizens for a future requiring an updated digital literacy framework. As nations adapt, learners must possess skills to navigate this evolving landscape. The chapter will start with key definitions and an overview of current digital literacy and AI in education. It will propose a robust framework to enhance existing digital literacy models within the context of AI literacy. Additionally, it will highlight strategies and explore future trends to strengthen global digital citizenship.

## Definitions

Before progressing further in this chapter, it is essential to define and operationalize a few key terms. Gardenier et al. (2024) suggest that digital citizenship has three dominant components: private, social, and public spheres. In the private sphere, citizens navigate autonomy and privacy; in the social sphere, they foster community engagement and collective identity; and in the public sphere, they participate in governance and advocate for the public good. This framework highlights how citizens balance the opportunities and risks of digitization, shaping society through empowerment and resilience in a digitally mediated world. Therefore, based on their work, they have put out a framework which will be discussed later in this chapter in relation to the connection to the digital citizenship needed for future productive AI engagement.

However, for this engagement to occur, AI literacy is essential. While there is no universally accepted definition of AI literacy, several common themes underpin the term. These include awareness of AI functionality, critical evaluation of AI technology, responsible use, ethical awareness, critical thinking, and global and cultural understanding (Jowallah 2024; Long & Margerko 2020; Bashir 2021; Cox 2024). AI literacy extends beyond media literacy by empowering users to question developers' motives, critically assess intended audiences, and evaluate the authenticity

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