



Chapter 3

Artificial Intelligence Educational Pedagogy Development: ICT Pedagogy Development for Education 5.0

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ABSTRACT

The current digital society has witnessed important developments in robotics and artificial intelligence (AI) research being applied to several spheres of life in order to address multitude of issues. While there are numerous studies on human-robot collaboration on low- and high-level tasks with a focus on robot development, in the current study, the chapter focused on organizational issues arising from human-robot co-working on education and research with particular reference to research and education network (REN) for universities as leverage to human capital development. The chapter identified critical issues in the current REN and tried to solve them with human-robot collaboration from an organizational and pedagogical normalization perspective. The research described an AI-powered instructional robotics application and the development process that the current society can participate and impact the AI pedagogic literacy using deep learning, introducing organizational robotics research studies with an emphasis on education and human capital expansion.

1. INTRODUCTION

Society 5.0 is a civilization that prioritizes the needs of its citizens, strikes a balance between social and economic progresses, and does it through a system that is tightly integrated with both the real and technologies or digital worlds (Audrey & Paksi, 2022). The Society 5.0 also known as the “super-smart society,” aspires to a socio-economic development that is inclusively sustainable and supported by digital technologies like big data analytics, artificial intelligence (AI), the Internet of Things (IoT) and robotics (Schoitsch, 2019). A widespread technology paradigm supporting Society 5.0 is the “cyber physical system,” which firmly integrates cyberspace and physical space, which several people first thought the idea was a lofty vision with no clear indication of how it would truly play out (Oztemel & Gursev, 2020). The Fourth Industrial Revolution and the transition to Society 5.0 are considered to be analogous in that both terms relate to the current fundamental transformation of our economic system into a new paradigm (Oztemel & Gursev, 2020; Huang et al., 2022). However, Society 5.0 is a more comprehensive idea because it envisions a radical changes in how we live, propelling industrial revolutions aimed to separate human labour from that of machines. These machines, which we may refer to as robots, will eventually assume control of the majority of the labour-intensive, monotonous, or hazardous tasks currently performed by humans (Javaid, Haleem, Singh, & Suman, 2021).

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