

Applicability of Robot Assistants in Higher Education

Authors: Fuad Budagov, Tarmo Robal, Mohammad Tariq Meeran

Abstract: The aim of this research is to examine how semi-autonomous robot assistants can be applied in higher education (HE) to support both instructional and administrative processes. The work is motivated by challenges such as increasing administrative demands, shortages of teaching assistants, declining student engagement, and the limited availability of timely feedback. To address these issues, three main scenarios are being supported with a development of robot assistant tooling/toolbox: automated attendance checks before class, the use of robots as teaching assistants during class for student support and pre-evaluation of activities, and post-class feedback collection. The study employs a mixed-method and action research design, including pilot implementations, iterative refinements, and classroom experiments. The objective is to build a toolbox that illustrates practical applications of robot assistants in HE and provides empirical insights into, acceptance and usability of robot assistants in HE, and the potential to promote more inclusive and interactive learning environments. This research contributes to digital transformation of education and explores how semi-autonomous robots can be meaningfully integrated into teaching and learning practices.

Keywords: Robot Assistants, Educational Technology, Teaching Support, Higher Education, Education Innovation