

Applicability of robot assistants in higher education for technical courses

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Abstract — The latest pandemic situation (COVID-19) tremendously affected societies, having also a significant impact on higher education. The disruptions caused by the pandemic, including widespread school closures and limitations in physical classroom interactions, further emphasized the obstructions faced in the continuation of education due to the COVID-19 pandemic. The situation clearly indicated the vulnerability of education continuation and the problems of remote education. As a positive side effect, the COVID-19 situation accelerated the pace of developing digital-technology based innovative approaches to teaching and learning.

In this context, the research project aims to investigate the efficiency of utilizing semi-autonomous robotic assistants, which are advanced technological devices designed to assist in various domains, including healthcare, elderly care, telemedicine, and facility inspection. This study focuses on exploring the applicability of these robotic assistants for teaching technical courses in higher education, bridging the gap between innovative teaching approaches and the potential of robotic-assisted instruction.

By examining the role and effectiveness of these robotic assistants, the research aims to study how these devices can be employed for the purposes of enhancing the learning experience for students and improving overall educational outcomes. Through careful analysis and evaluation, the project will explore how robotic assistants can contribute to increased student engagement, personalized instruction, and effectively transfer technical knowledge.

The findings of this research will provide valuable insights and recommendations for integrating robotic assistants into teaching practices, ultimately innovating and optimizing the educational environment in higher education settings, e.g., technology universities. In addition, the study will explore potential challenges and barriers.

Keywords — *telepresence robots, semi-autonomous robots, robotic assistants, higher education, technical courses, remote participation, smart classroom, innovation in education*