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Telepresence robots in education

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Telepresence robots are systems that integrate a remote-controlled robot and videoconferencing equipment, allowing the user to interact at a distance through voice, video, and motion. They can be used as a means of remote participation in synchronous hybrid education, which involves the simultaneous teaching of on-site students and remote students. By operating a telepresence robot, a remote student can independently "move around" in the synchronous classroom and interact with participants who are physically there.

Telepresence robots have been used to enable the participation of homebound or chronically ill hospitalized students in classroom-based teaching (Page et al., 2021). Another typical application context is in higher education (Leoste et al., 2022). Existing systematic research reviews suggest that telepresence robots are experienced positively and that they can promote remote students' inclusion and engagement in the classroom (Page et al., 2021; Fletcher et al., 2023). At the same time, several technical, practical, and pedagogical challenges need to be addressed, such as ensuring the availability of reliable Internet service and identifying best practices to support robot-mediated students during classroom activities (Johannessen et al., 2022; Leoste et al., 2022).

An emerging line of inquiry concerns interactional patterns in classrooms where telepresence robots are used (e.g., Jakonen & Jauni, 2021). More research into actual usage patterns and how they change over time is needed to find optimal ways of using telepresence robots in education (Leoste et al., 2022) and to identify key pedagogical competencies needed for synchronous hybrid education.

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