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**TOWARDS A MORE  
EQUITABLE EDUCATION:  
FROM RESEARCH TO CHANGE**

**BOOK OF PROCEEDINGS**

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# POSSIBILITIES AND CHALLENGES OF USING DIGITAL TECHNOLOGY IN INCLUSIVE EDUCATION

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## Introduction

Inclusive education is achieved by providing various types of additional support to students who may need it for reasons including but not limited to developmental difficulties, deprived family circumstances, socio-economic disadvantages, and developmental crises. The process of providing additional support to students requires the restructuring of school work according to the needs and capabilities of students (Alexaki et al., 2022), especially children with developmental disabilities. This process is riddled with challenges stemming from factors such as the political and economic conditions under which the school system operates, the way legislation in this domain is conceived and enacted, the existing (school) system solutions, the competencies of teachers and other school staff, negative attitudes towards inclusive education, a conservative school tradition, school organizational conditions, and difficulties in providing and employing assistive technology (Ahmad, 2015; Grönlund et al., 2010; Mendez et al., 2022; Šaljić, 2023; Vujačić et al., 2015).

With the increasingly widespread use of technology in various social spheres, its application in education has emerged as a crucial issue, particularly in efforts to more adequately respond to students' needs. In the context of inclusive education, digital technology implies a wide range of equipment, tools, strategies, and services (from simple aids such as pen grips to computers with specialized software) that provide students with developmental disabilities with appropriate support and assistance in mastering school curriculum and achieving optimal learning outcomes (Ahmad, 2015; Sánchez-Serrano et al., 2020).

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## **The Possibilities of Using Digital Technology in the Process of Providing Additional Support to Students**

Digital technology has been used in education for several decades and has demonstrated a significant potential to improve and transform the teaching and learning processes (Senić Ružić, 2021), primarily in the domain of communication and collaboration, engaging students in an interactive, innovative, and interesting learning environment, as well as developing digital literacy, 21st-century skills, and digital citizenship (Taylor et al., 2021). Research has recognized numerous opportunities for using technology in the process of providing additional support to students. Technology can be used to adapt teaching methods to student needs, provide a creative and cooperative learning environment, and encourage students with developmental disabilities to actively participate and collaborate with their peers, thus leading to their empowerment (Stendal, 2012; *Global Education Monitoring Report – Inclusion and education* [GEMR], 2020). Hence, technology can contribute to the reduction or elimination of barriers that hinder the participation of students with developmental disabilities in certain school activities (Stendal, 2012).

To provide adequate additional support to students, it is necessary to choose appropriate digital tools. Depending on the assessment of students' needs, abilities, and inclinations, as well as the specific characteristics of different developmental difficulties, various assistive technologies can be used, such as electronic books (including Braille books), word scanners, text prediction programs, text-to-speech software and devices, word processing programs, spelling and grammar checkers, calculators, screen readers, screen magnifiers, audio or video lessons, signal devices, closed captioning, voice recognition software, hand-eye coordination apps, electronic organizers, and highlighters (Ahmad, 2015).

Research on the effects of using technology in education has shown that it makes learning more interesting, supports different learning styles, and encourages student motivation (Heemskerk et al., 2005; Kuenneville, 2001; Obradović et al., 2015; as cited in GEMR, 2020). Findings indicate that students respond positively to the classroom use of tablets, which are particularly suitable for students with autism, ADHD, and a need for multisensory stimulation (Johnson, 2013; Mintz et al., 2012). Studies have suggested that the use of multimedia, dictation software, and applications for organizing

ideas and notes helps students with learning disabilities, while PowerPoint presentations, graphic symbols, and online video and audio lessons yield beneficial results in working with students with various developmental disabilities (Batorowicz et al., 2012; Jones et al., 2007; as cited in GEMR, 2020). It is believed that the use of multimedia mobile devices (e.g., iPad, iPod, tablets, and pens for touch screens) contributes not only to the development of fine motor skills (the control of small muscles in fingers), but also to the development of various student competencies (Johnson, 2013; Sánchez-Serrano et al., 2020). These devices can be used in working with children who have different disabilities, although there are indications that students with cognitive disabilities do not respond as favorably as others (Johnson, 2013). Finally, an individualized approach is necessary when choosing appropriate digital tools for providing additional student support. Therefore, it is important to mention findings confirming that the use of technology in the education of students requiring additional support opens up a new space for learning, enables the adaptation of educational content to students' needs, and contributes to the development of students' social and communication skills (Mendez et al., 2022; Sánchez-Serrano et al., 2020; Stendal, 2012).

### **The Challenges of Using Digital Technology in the Process of Providing Additional Support to Students**

Using technology in the implementation of inclusive education can reduce the feeling of isolation among students with various developmental disabilities and contribute to overcoming obstacles to their active participation in certain school activities. On the other hand, it can result in increased exclusion and discrimination (Cabero & Ruiz-Palmero, 2017; as cited in Mendez et al., 2022; Stendal, 2012) due to limited access to technology, inadequate technical equipment and support, a lack of experience and digital competencies (of teachers as well as students), negative attitudes towards the use of technology in education, and inadequate assessments of students' needs, abilities, and the additional support they require (Ahmad et al., 2015; GEMR, 2020; Mendez et al., 2022; Stendal, 2012). Despite the aforementioned challenges, there is room for optimism, with research findings indicating that the key actors in education have recognized digital technology as a significant element of support for all students to actively participate in the educational process and learn together (Mendez et al., 2022).

Teachers' digital competencies are considered to be one of the main challenges in using technology in (inclusive) education. Research results have shown that teachers lack the skills necessary to adequately use technology in the provision of learning support to students, which indicates the necessity of continuous professional development in this domain (Cabero Almenara et al., 2022; Mendez et al., 2022; Sánchez-Serrano et al., 2020).

## Conclusion

Using digital technology in the process of providing additional student support should not be seen as a goal in itself or a universal solution, but as a form of student support and assistance that contributes to the creation of a more favorable environment for learning and implementing new teaching strategies that respond to the needs of a heterogeneous student population (Hersh, 2017; as cited in Cabero Almenara et al., 2022). Therefore, the integration of digital technology into the inclusive school practice should be an important element of the education policy, based on the assessment and acknowledgment of all relevant contextual factors. Purposeful use of digital technology in inclusive education requires the provision of the necessary conditions and the continuous development of all key actors' digital competencies as crucial prerequisites to properly assessing students' needs and designing individualized additional support plans in which digital technology has a suitable role.

**Keywords:** inclusive education, additional support for students, digital technology

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