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Barriers and Opportunities in the Use of Technology for Early Mathematics Education

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Abstract

This study examines the use of technology, specifically mathematical computer applications, in early childhood education among preschool teachers and their assistants. It investigates educators' attitudes toward integrating digital tools into everyday teaching practices, as well as the challenges they encounter in implementing these tools. Data were collected through a questionnaire administered to a non-random convenience sample of 100 Slovenian preschool teachers and assistants across multiple regions. Given the sample size, results provide insights into localized trends but are not generalizable to the broader population. Statistical analysis, including Chi-square (χ^2) tests, was conducted to identify significant associations between variables such as years of service and the age group of children taught. The findings indicate that most educators rarely use technology for mathematics education, citing inadequate equipment, concerns about the developmental suitability of digital tools, and a preference for hands-on, concrete learning as more effective for young children. Additionally, technology usage varied based on teachers' years of experience and the age group of the children they worked with. The study highlights the need for improved technological infrastructure in kindergartens and ongoing professional development to support educators in effectively incorporating digital tools into their teaching. Addressing these barriers could help create a more balanced approach between traditional and technological methods for fostering early mathematical literacy.

Keywords: digital tools, early mathematics, preschool teachers, technology integration, teaching practices