DIGITAL TECHNOLOGY IN KINDERGARTEN: RESULTS OF A NATIONWIDE STUDY AMONG KINDERGARTEN TEACHERS

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Technological development leads to opportunities and creates new challenges in kindergarten as well (Magen-Nagar & Firstater, 2019). Various digital devices, especially portable touchscreen devices, now have parameters and affordable prices that allow widespread use in kindergartens (Furman et al., 2019). While digital technology is gaining ground in kindergarten education, it is important not to focus solely on the technological tools, because kindergarten teachers are the key to their successful integration and effectiveness (Danniels et al., 2020; Escueta et al., 2017; Verhoeven et al., 2020). In our research, we asked Hungarian kindergarten teachers to explore their practice and background related to the use of digital technology in early childhood education. The online questionnaire of this study consisted of three main parts: (1) access to technology, frequency and purpose of use; (2) teachers' digital competence by adopting the DigCompEdu self-assessment tool (Ghomi & Redecker, 2019); and (3) digital attitude (Clifford et al., 2020) and prior trainings related to educational technology. 242 kindergarten teachers participated in our study, with the mean age of 46.2 years. The instruments were reliable (.86 ≤ Cronbach's alpha ≤ .89). The most common devices in kindergartens are still laptops (90%) and PCs (77%), while tablets are used in a smaller ratio (32%), and even fewer teachers have access to educational robots (4%). The focus of teachers' use of technology is professional development, communication, administration, and preparation for training sessions. Only a few of them (43%) use digital tools for skill development in the classroom, even if the tools are available. A possible reason for this is that only 63% of them took part in any training related to digital technology in the past, and these were hardly focused on digital education methods, planning, or assessment. Their trainings were mainly related to technology use or administration. This result also appeared in the kindergarten teachers' digital competence level, as they reached only 31.2%p (SD = 14.3%p) on the DigCompEduSAT scale. However, they performed better on the professional engagement subscale (M = 48.1%p, SD = 20.3%p) which includes communication and collaboration, as well as online training programs. While kindergarten teachers' digital attitude (M = 52.8%p, SD = 16.1%p) correlated with their digital competence (r = .59, p < .001) and use of technology (r = .23, p < .001), these two factors are not related to the teachers' age (p > .05). The research provided new information about the use of technology in kindergarten. It also showed that the teachers' age is not related to their digital competence or practice. The findings draw attention to the need for teacher training programs on technology-supported early childhood education.