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KEY CHALLENGES OF USING DIGITAL MEDIA TOOLS IN EARLY LANGUAGE EDUCATION: A RESEARCH REVIEW

ABSTRACT

The topic of digital media as tools in early language education is put into a broader perspective of the theory of overlapping spheres of influence between school, family, and local community. It draws attention to divides that hinder the integration of digital technologies in child language learning. Firstly, there is a mismatch between insufficient preservice training in using Information and Communication Technologies *and* the digital challenges that preservice teachers face in the workplace. Secondly, there is a dichotomy between their unsatisfactory education in cultivating direct contact with parents *and* the well-established importance of building close parent-teacher collaboration. Thirdly, there is a gap between home routines *and* formal early language education in regard to applying digital technologies. The article draws on an extensive review of research on young learners.

Keywords: language acquisition/learning, digital media, language teacher education

ABSTRAKT

KLUCZOWE WYZWANIA ZWIĄZANE Z WYKORZYSTANIEM MEDIÓW CYFROWYCH
WE WCZESNEJ EDUKACJI JĘZYKOWEJ: PRZEGLĄD BADAŃ

Artykuł podnosi temat roli i miejsca mediów cyfrowych jako narzędzi w nauczaniu i uczeniu się języka przez małe dzieci, ujęty z perspektywy teorii o relacjach szkoła-rodzina-społeczność lokalna. Omówiono wybrane dyktomye w tychże relacjach. Po pierwsze, dysharmonia pomiędzy niedostatecznym przygotowaniem przyszłych nauczycieli w zakresie technologii informacyjno-komunikacyjnych, a wyzwaniami jakim muszą oni sprostać w pracy. Po drugie, różnica pomiędzy nieadekwatną edukacją tychże nauczycieli w kwestii kultywowania bezpośredniego kontaktu z rodzicami uczniów, a dobrze udokumentowaną w badaniach potrzebą budowania bliskich relacji typu nauczyciel-rodzic. Po trzecie, rozbieżność pomiędzy rytuałami domowymi, a edukacją przedszkolną i wczesnoszkolną w zakresie korzystania z technologii cyfrowych do nauki języka. Praca prezentuje przegląd badań w kontekście edukacji (wczesno)szkolej.

Słowa kluczowe: przyswajanie/uczenie się języka, media cyfrowe, kształcenie nauczycieli języków

1. Introduction

The Council of the European Union recommendation on eight key competences for lifelong learning identifies digital and technology-based competences and defines digital competence as:

the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competences related to cybersecurity), intellectual property related questions, problem solving and critical thinking¹.

The enabling institutions such as The European Commission (EC), European Centre for Modern Languages of the Council of Europe (ECML/CELV), the United Nations Educational, Scientific and Cultural Organization (UNESCO), and The Organization for Economic Co-operation and Development (OECD) promote media skills in early childhood education (ECE). The European Commission's six priorities for 2019–2024 included *A Europe fit for the digital age; Digital Education Action Plan* for

¹ European Commission, *Key competences for lifelong learning*, Luxembourg 2019, p. 10.

2021–2027, which aims to enable people to acquire basic digital skills and competences at ECE. These initiatives introduce communities of practice and offer good practices and free tools for teachers. Countries across the OECD offer digital language learning environments for teachers, pupils and parents like *e-Estonia*, the Danish *User Portal Initiative*, or The Luxembourg *Digital4Education*². ECML/CELV provides expertise in new media in language education and it caters for language teachers' digital literacy. It offered various projects related to these issues such as *Digital citizenship through language education* for 2020–2022 and *Transferal competences in foreign language education* for 2020–2023. United Nations Member States adopted the 2030 *Agenda* for Sustainable Development for the world. In the Seventeen Sustainable Development Goals, Goal 4 and Goal 16 ensure quality education and sustainable development, and address media education as an integral element of modern education³.

Nowadays, almost all students have access to computers in schools⁴. However, "the concept of a computer lab present in every school" is "perceived as archaic"⁵ as digital tools are no longer confined to one dedicated space. This is a step towards working with more sophisticated digital technologies, including artificial intelligence. Yet, "there is a continuous risk that investments in digital technologies have no return or even prove ineffective for education, if the technologies are not (proficiently) used in class"⁶. This may be due to existing divides that hinder the integration of digital technologies in education, such as insufficient training in using ICT *and* the digital challenges that novice teachers face in the workplace, or unsatisfactory education in cultivating strong and close partnerships with parents of their future pupils *and* the well-established importance of such collaboration, as well as a gap between home routines *and* using digital technologies in formal early language education.

2. Family-school linkages

In Bronfenbrenner's⁷ ecological model healthy development is guaranteed by strong and close partnerships and communication of family-school linkages.

² R. van der Vlies, *Digital strategies in education across OECD countries: Exploring education policies on digital technologies*, Paris 2020, p. 11.

³ S. Ratajski, *Media education as a challenge*, Warsaw 2019, p. 7.

⁴ OECD, *OECD Skills Outlook 2019: Thriving in a Digital World*, Paris 2019, p. 183.

⁵ Working Committee, *The digitalisation of Polish education. Visions and proposals*, Warsaw 2016.

⁶ R. van der Vlies, *Digital strategies...*, p. 17.

⁷ U. Bronfenbrenner, *Ecological models of human development*, [in:] *International encyclopaedia of education* 3.2, Oxford 1994, pp. 37–43.

Without this partnership, the parties “segment” a child into “the school child” and “the home child”, unable to see “the whole child”⁸.

The process of acquiring a social identity by a preschool child begins and develops in the home and in the kindergarten microsystem dimensions. In Epstein’s theoretical model of overlapping spheres of influence between school, family, and community, communication “integrates and extends ecological, educational, psychological, and sociological theories and perspectives on social organization and relationships”⁹. This model assumes six types of involvement: parenting, communicating, volunteering, learning at home, decision making and collaborating with the community. These “two-way communications” guarantee that “educators and families exchange information and ideas with each other and recognize and honor their shared responsibilities” for the wellbeing of children¹⁰. The preschool grade is a moment in a child’s life when there occurs “the greatest overlap of family and school spheres”¹¹. Ebert et al.¹² and Anders et al.¹³ reason that a child’s language development is strongly influenced by individual traits as well as family and home-related factors. A kindergartener’s linguistic functioning depends on the quality and effectiveness of interactional partners’ efforts to achieve reciprocal benefits¹⁴. Parental literacy practices show that the child’s language and communicative competences are very often based on software¹⁵. Children participate in social networks by texting with parents and friends. Parents are usually the ones who assist children when they ask for help with digital devices¹⁶. In this way, new technologies also support intergenerational relationships¹⁷.

⁸ J.L. Epstein, *School, Family, and Community Partnerships*, Thousand Oaks 2011, p. 5.

⁹ Ibidem, p. 44.

¹⁰ Ibidem, p. 47.

¹¹ Ibidem, p. 33.

¹² S. Ebert et al., *Internal and external influences on vocabulary development in preschool children*, “School Effectiveness and School Improvement” 2013, 24.2, pp. 138–154.

¹³ Y. Anders et al., *Methodological challenges of evaluating the effects of an early language education programme in Germany*, “International Journal of Child Care and Education Policy” 2016, 10, p. 15.

¹⁴ C. Kramsch, *From language proficiency to interactional competence*, “Modern Language Journal” 1986, 70, p. 367; J. Rokita-Jaśkow, *Foreign language learning at pre-primary level. Parental aspirations and educational practice*, Kraków 2012, p. 137; S. Zein, *Imagining one’s self as a child and speech modification: Implications for teacher education*, Bristol 2019, p. 60.

¹⁵ J. Rokita-Jaśkow, *Foreign language...*, p. 138.

¹⁶ M. Hatzigianni, K. Margetts, *Parents’ beliefs and evaluations of young children’s computer use*, “Australasian Journal of Early Childhood” 2014, 39 (4), p. 117.

¹⁷ S. Eagle, *Learning in the early years: Social interactions around picture books, puzzles and digital technologies*, “Computers & Education” 2012, 59, p. 40.

Many children aged three and four who see their family members using digital devices “often use interactive media for a variety of purposes themselves” and in this way they “observe types of literacy beyond traditional print-based text”¹⁸. As stated by Erdogan et al.¹⁹ learning takes place when “children interact with adults and observe their behavior”. Thus, this “increased desire” to use digital devices among children is mainly influenced by “parents’ (or other family members’) constant use of ICTs”²⁰.

To sum up, digital media tools are “important channels” of informal language acquisition and they should become an integral part of formal early language education, equipping children with digital skills that they need in an ever-changing world²¹.

3. The gaps in ECE

In many countries media education is implemented in curricula in the later stages of the curricula²². This traditional approach is to protect preschoolers against “the high culture of media addiction and manipulation”²³, or is a result of inefficient “technology integration and practices for the early childhood sector”²⁴, or because some early childhood teachers “may not be willing, or feel as able to

¹⁸ B. Beschoner, A. Hutchison, *iPads as a literacy teaching tool in early childhood*, “International Journal of Education in Mathematics, Science and Technology” 2013, 1 (1), p. 17.

¹⁹ N. Erdogan et al., *Do Parents Prefer Digital Play? Examination of Parental Preferences and Beliefs in Four Nations*, “Early Childhood Education Journal” 2019, 47, p. 132.

²⁰ J. Lepičnik, P. Samec, *Communication Technology in the Home Environment of Four-year-old Children (Slovenia)*, “Comunicar” 2013, XX (40), p. 124.

²¹ A. Wileczek, *Applications supporting Polish language acquisition by children: An outline of current issues*, “InScriptum: A Journal of Language and Literary Studies” 2020, 1 (1), p. 61.

²² E.g., D. Kellner, J. Share, *Toward Critical Media Literacy: Core concepts, debates, organizations, and policy*, “Discourse: studies in the cultural politics of education” 2005, 26 (3), p. 371; A. Vatalaro et al., *A Quasi-Experiment Examining Expressive and Receptive Vocabulary Knowledge of Preschool Head Start Children Using Mobile Media Apps*, “Early Childhood Education Journal” 2018, 46, p. 452; B. Beschoner, A. Hutchison, *iPads as...*, p. 17; M. Vaughan, C. Beers, *Using an Exploratory Professional Development Initiative to Introduce iPads in the Early Childhood Education Classroom*, “Early Childhood Education Journal” 2017, 45, p. 322; E.J. Instefjord, E. Munthe, *Educating digitally competent teachers: A study of integration of professional digital competence in teacher education*, “Teaching and Teacher Education” 2017, 67, p. 38; P.A. Kirschner, P.D. Bruyckere, *The myths of the digital native and the multitasker*, “Teaching and Teacher Education” 2017, 67, p. 137.

²³ D. Kellner, J. Share, *Toward Critical...*, p. 372.

²⁴ M. Vaughan, C. Beers, *Using an...*, p. 321; E.J. Instefjord, E. Munthe, *Educating digitally...*, p. 37.

integrate technology into their teaching"²⁵ since, as Blackwell et al.²⁶, state, access to technology depends on external factors, but actual use is shaped by personal ones. Teachers who believe that young children need only physical activity and hands-on experience to later grasp abstract concepts²⁷ may even want "to dismiss the computer as a learning tool"²⁸.

3.1. Gap one

The role of teacher education has been to "facilitate teacher students' embedding of computers into their future practice"²⁹, but the training in using ICT technology that preservice teachers receive does not go hand in hand with the digital challenges that they have to face in the workplace³⁰. About two-thirds of European teacher education systems have already recognized that prospective teachers have to get specific digital competences defined as essential knowledge and skills for "how to integrate digital technologies into their teaching and learning and be able to use them effectively"³¹, but only in half of European teacher education systems "top-level regulations or recommendations promote the inclusion of teacher-specific digital competences in initial teacher education (ITE)"³². In about four-fifths of education systems the assessment of prospective teachers' digital competences is underdeveloped, unlike in Spain and Austria, where there are systems of teacher self-evaluation based on self-assessment tools³³.

²⁵ B. Beschorner, A. Hutchison, *iPads as...*, p. 23.

²⁶ C.K. Blackwell et al., *Adoption and use of technology in early education The interplay of extrinsic barriers and teacher attitudes*, "Computers & Education" 2013, 69, p. 318.

²⁷ N. Zaranis, M. Kalogiannakis, S. Papadakis, *Using mobile devices for teaching realistic mathematics in kindergarten education*, "Creative Education" 2013, 4 (7A1), p. 3.

²⁸ M.G. Lindahl, A.-M. Folkesson, *Can we let computers change practice? Educators' interpretations of preschool tradition*, "Computers in Human Behavior" 2012, 28, p. 1733.

²⁹ Ibidem, p. 1736.

³⁰ D. Kellner, J. Share, *Toward Critical...*, pp. 369–386; Ö. Yurt, N. Cevher-Kalburan, *Early childhood teachers' thoughts and practices about the use of computers in early childhood education*, "Procedia Computer Science" 2011, 3, pp. 1562–1570; M. Vaughan, C. Beers, *Using an...*, pp. 321–331; E.J. Instefjord, E. Munthe, *Educating digitally...*, pp. 37–45; M.J. Myrtil et al., *Preschool Teachers' Implementation Fidelity When Using a Technology-Mediated Language and Literacy Intervention*, "Child Youth Care Forum" 2018, 47, pp. 771–786; K. Nikolopoulou et al., *Early Reading Skills in English as a Foreign Language Via ICT in Greece: Early Childhood Student Teachers' Perceptions*, "Early Childhood Education Journal" 2019, 47, pp. 597–606.

³¹ Eurydice, *Digital education at school in Europe*, Luxembourg 2019, p. 11.

³² Ibidem, p. 12.

³³ Ibidem.

3.2. Gap two

Research on preservice language teachers' views on teacher-parent partnerships reveals a lack of understanding of the role Epstein's parent involvement types play in children's academic success³⁴. Teacher candidates who lack understanding of partnership potential may, as novices, keep parents at a distance³⁵. Lacking "partnership skills"³⁶, teachers may believe preschoolers' digital skill development is solely the family's responsibility³⁷. Studies have shown that early childhood teachers' classroom practices are strongly influenced by their beliefs³⁸ as well as that kindergarten teachers' positive attitude toward iPads supports literacy development in children³⁹.

3.3. Gap three

Young children encounter many digital media opportunities at home, but not in formal school settings⁴⁰. Interactive applications are mainly used as self-education

³⁴ A. Bąk-Średnicka, *In search of reflective techniques promoting collaboration with parents: diploma students' projects inspired by school placements*, "Glottodidactica" 2019, XLVI/2, p. 7.

³⁵ E.g., B.A. McBride, *Preservice teachers' attitude toward parental involvement*, "Teacher Education Quarterly" 1991, 18 (4), pp. 57–67; E. Graue, C.P. Brown, *Pre-service teachers' notions of families and schooling*, "Teaching and Teacher Education" 2003, 19 (7), pp. 719–735; A.C. Baum, P. McMurray-Schwarz, *Preservice teachers' beliefs about family involvement: Implications for teacher education*, "Early Childhood Educational Journal" 2004, 32 (1), pp. 57–61; A. Uludag, *Elementary preservice teachers' opinions about parental involvement in elementary children's education*, "Teaching and Teacher Education" 2008, 24 (3), pp. 807–817.

³⁶ J.L. Epstein, *School, Family...*, p. 6.

³⁷ J. Juszczak-Rygałło, *Wczesnoszkolna edukacja medialna jako wprowadzenie do edukacji całościowej*, "Academic Works of Jan Długosz University of Częstochowa: Pedagogy" 2015, XXIV, pp. 89–99.

³⁸ D.M. Bryant et al., *Best practices for beginners: developmental appropriateness in kindergarten*, "American Educational Research Journal" 1991, 28 (4), pp. 783–803; B.Y. Hu et al., *Chinese preschool teachers' knowledge and practice of teacher-child interactions: the mediating role of teachers' beliefs about children*, "Teaching and Teacher Education" 2017, 63, pp. 137–147; M.B. McMullen, *Characteristics of teachers who talk the DAP talk and walk the DAP walk*, "Journal of Research in Early Childhood Education" 1999, 13 (2), pp. 216–230; A.H.H. Mohamed, I.A. Al-Qaryouti, *The association between preschool teachers' beliefs and practices about developmentally appropriate practices*, "Early Child Development and Care" 2016, 186 (12), pp. 1972–1982; C.T. Tan, *Enhancing the quality of kindergarten education in Singapore: policies and strategies in the 21st century*, "International Journal of Child Care and Education Policy" 2017, 11/7, p. 18.

³⁹ O.K. Olandunjoye, *iPad and computer devices in preschool: A tool for literacy development among teachers and children in preschool*, Project work, University of Stockholm 2013; A. Bautista et al., *Learning areas for holistic education: kindergarten teachers' curriculum priorities, professional development needs, and beliefs*, "International Journal of Child Care and Education Policy" 2016, 10/8, pp. 1–18.

⁴⁰ E.g., D. Kellner, J. Share, *Toward Critical...*, pp. 369–386; A. Buchner, M. Kisilowska, M. Wierzbicka, *Mistrzowie kodowania. Junior. Przegląd literatury przedmiotu*, Warszawa 2015; A. Vatalaro et al., *A Quasi-Experiment...*, pp. 451–466; A. Wileczek, *Applications supporting...*, pp. 49–66.

(literacy) tools at home. There is the (over)exposure of children as young as three and four years old to the increasing usage of (new) media at home⁴¹. Parents who do not receive support from the school may be unaware of the consequences of (over)using interactive applications for their children⁴². Rose et al.⁴³ note that many parents unconditionally trust that the widely advertised video games and software have “great educational benefits and that their children need them in order to excel in life”. Scaffolding interactive tools which are used merely for play *can* contribute to communication and early digital literacy development through adult-child instructional mediation and child-child learning interaction and integration. If used in formal contexts, the educative potential of multimodal applications might give children with delayed linguistic and social development an advantage in linguistic and social L1 and L2 outcomes⁴⁴.

4. Conclusion

Teacher candidates should actively involve parents in the purposeful use of digital media, understand its potential benefits, and recognize the importance of

⁴¹ E.g., S. McKenney, J. Voogt, *Technology and young children: How 4–7 year olds perceive their own use of computers*, “Computers in Human Behavior” 2010, 26, pp. 656–664; J. McPake et al., *Pre-school children creating and communicating with digital technologies in the home*, “British Journal of Educational Technology” 2013, 44 (3), pp. 421–431; O.K. Olandunjoye, *iPad and...*; B. Beschorner, A. Hutchison, *iPads as...*, pp. 16–24; E. Wood et al., *Software to Promote Young Children’s Growth in Literacy: A Comparison of Online and Offline Formats*, “Early Childhood Education Journal” 2017, 45, pp. 207–217; M.A. Evans et al., *The effect of alphabet eBooks and paper books on preschoolers’ behavior: An analysis over repeated readings*, “Early Childhood Research Quarterly” 2017, 40, pp. 1–12; A. Vatalaro et al., *A Quasi-Experiment...*, pp. 451–466; M.M. Neumann, *Using tablets and apps to enhance emergent literacy skills in young children*, “Early Childhood Research Quarterly” 2018, 42, pp. 239–246; P.S. Lisenbee, C.M. Ford, *Engaging Students in Traditional and Digital Storytelling to Make Connections Between Pedagogy and Children’s Experiences*, “Early Childhood Education Journal” 2018, 46, pp. 129–139; I. Maureen et al., *Supporting Literacy and Digital Literacy Development in Early Childhood Education Using Storytelling Activities*, “International Journal of Early Childhood” 2018, 50, pp. 371–389.

⁴² N. Erdogan et al., *Do Parents...*, pp. 131–142; M. Hatzigianni, K. Margetts, *Parents’ beliefs and evaluations of young children’s computer use*, “Australasian Journal of Early Childhood” 2014, 39 (4), p. 120.

⁴³ K.K. Rose et al., *Parental Decision Making About Technology and Quality in Child Care Programs*, “Child Youth Care Forum” 2013, 42, p. 477.

⁴⁴ E.g., A. Vatalaro et al., *A Quasi-Experiment...*, p. 462; J.R. Skouge et al., *Promoting early literacy for diverse learners using audio and video technology*, “Early Childhood Education Journal” 2007, 35 (1), 5–11.

developing children's digital skills⁴⁵. They should also stay informed about longitudinal studies exploring ICT use in ECE, including children's use⁴⁶ and parents' views⁴⁷.

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⁴⁵ Ibidem, pp. 11–12.

⁴⁶ Cf. O. Sulaymani et al., *A Reciprocal Digital Relationship Between Home and School: A Case Study from Saudi Arabia Using Cultural-Historical Theory*, "International Journal of Early Childhood" 2018, 50, pp. 227–240; F.A. Dashti, A.K. Yateem, *Use of Mobile Devices: A Case Study with Children from Kuwait and the United States*, "International Journal of Early Childhood" 2018, 50, pp. 121–134.

⁴⁷ A. Cascales et al., *Study on Parents' Acceptance of the Augmented Reality Use for Preschool Education*, "Procedia Computer Science" 2013, 25, pp. 420–427.

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