FORUM PEDAGOGICZNE

2024, 14, 2.1: 63–74
p-ISSN 2083-6325; e-ISSN 2449-7142
DOI http://doi.org/10.21697/fp.2024.2.1.5

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Received: 10.06.2024; revised: 18.07.2024; accepted: 20.07.2024

THE IMPORTANCE OF ICT IN DEVELOPING CHILDREN'S LANGUAGE AND READING SKILLS

ZNACZENIE TIK W PROCESIE ROZWIJANIA UMIEJĘTNOŚCI JĘZYKOWYCH I CZYTELNICZYCH DZIECI

Streszczenie: W artykule podjęto problematykę możliwości wykorzystania technologii informacyjno-komunikacyjnych (TIK) w rozwijaniu umiejętności językowych i czytelniczych u dzieci, skupiając się na aplikacjach edukacyjnych i audiobookach. Podkreślono w nim znaczenie personalizacji procesu nauki oraz integracji nowoczesnych technologii z tradycyjnymi metodami nauczania. W opracowaniu omówiono znaczenie urządzeń elektronicznych dla psychospołecznego rozwoju dzieci, z uwzględnieniem korzyści i zagrożeń związanych z ich użyciem we wczesnej edukacji. W artykule zaakcentowano również rolę rodziców w rozwijaniu kompetencji cyfrowych dzieci i przedstawiono przykłady edukacyjnych zastosowań aplikacji takich jak *Duolingo*, *Headsprout Early Reading* czy *ABCmouse*. W kontekście rozwoju umiejętności czytelniczych i językowych, artykuł podkreśla również wartość audiobooków w rozwijaniu zdolności słuchania i wyobraźni. Podsumowując, autorzy optują za odpowiedzialnym podejściem do integracji TIK z edukacją, mając na celu skuteczne wspieranie umiejętności językowych i czytelniczych u uczniów.

Słowa kluczowe: technologie informacyjno-komunikacyjne, kompetencje językowe, edukacja wczesnoszkolna, kształcenie zdalne

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Abstract: The article discusses the possibility of using information and communication technologies (ICT) in developing language and reading skills in children, focusing on educational applications and audiobooks. It emphasized the importance of personalizing the learning process and integrating modern technologies with traditional teaching methods. The study discusses the importance of electronic devices for the psychosocial development of children, taking into account the benefits and risks associated with their use in early education. The article also highlights the role of parents in developing children's digital competences and presents examples of educational applications of applications such as *Duolingo*, *Headsprout Early Reading* and *ABCmouse*. In the context of developing reading and language skills, the article also emphasizes the value of audiobooks in developing listening and imagination skills. To sum up, the authors opt for a responsible approach to the integration of ICT in education, with the aim of effectively supporting students' language and reading skills.

Keywords: information and communication technologies, language skills, early education, remote learning

Introduction

In today's rapidly evolving environment, where technology plays a crucial role, there is a necessity to integrate information and communication technologies (ICT) at every educational level (Smyrnova-Trybulska, 2018). It is worth noting that there are almost no limitations in this field, and one of the key examples of their application is actions conducive to developing the language and reading skills of children and youth.

ICT enables the use of innovative teaching methods that significantly support the development of students' language skills from a very young age. Modern technologies allow access to interactive educational content that engages and captures the attention of children (Warchoł, 2021, p. 23). Furthermore, applications and other technological forms of supporting the educational process provide students with an attractive working environment and comfort, which is particularly important for children encountering new concepts for the first time (Szczotka, Szewczuk, 2017).

Modern technologies also enable the personalization of the learning process, tailored to the individual abilities and predispositions of the child. Innovative programs allow for ongoing monitoring of students' work, adjusting the level of tasks to their cognitive abilities, and offering additional remedial tasks. Moreover, online interaction helps overcome barriers of shyness, supporting students who may have difficulty learning through traditional teaching methods (Pulak, Szewczuk, 2017).

However, it is important to maintain balance and moderation in the use of ICT in the education process of the youngest learners. Clear separation of the virtual world from the real one is a task for parents and teachers who should responsibly

adapt electronic educational materials for early childhood education, ensuring the holistic development of young individuals (Tuczyński, Walat, 2019).

Information and communication technologies and the psychosocial development of children

The use of information and communication technologies (ICT) in working with children can significantly enrich the learning process. Children, almost from birth, are surrounded by various forms of electronic information and communication tools, such as smartphones or laptops (Nixon and Hateley, 2013). In today's world, where technology has become an integral part of daily life, their use is becoming common even among the youngest (Huk, 2018, p. 55), which has an impact on their psychosocial development (Niemirowski, 2015, p. 14).

In the context of developmental psychology, it is particularly important to understand how interactions with technology shape children's cognitive, emotional, and social processes, and thus, the significance of electronic tools for children's acquisition of knowledge and skills and for building relationships with their environment. However, it is worth emphasizing that the use of information and communication technologies in preschool and early school education may have both benefits and risks.

Modern technologies can support the development of children's cognitive skills through the use of interactive applications, educational games, or other multimedia educational content. The internet provides access to very broad, almost limitless sources of knowledge, which can broaden the interests of the youngest participants in the educational process (Hokmokl, 2009). Additionally, regular use of information technologies enhances their ability to use them, which directly translates into effective functioning in the information society. It is also worth mentioning the possibility of social integration and cooperation with individuals thousands of kilometers away, which has proven to be particularly significant during the pandemic caused by the spread of the SARS-CoV-2 virus (Śmiechowska-Petrovskij, Kuracki, Paluch et al., 2022).

On the other hand, excessive use of technological innovations among students can lead to information overload, associated with the risk of many negative consequences for children's mental health (Furmanek, 2014). Therefore, it is crucial to maintain a balance between the methods used in educational activities. It is also important to pay attention to the risks directly related to the content offered by the global internet network. Besides useful information, the internet offers a multitude of aggressive, age-inappropriate, and addictive content, which signals caregivers to effectively monitor their ward's online activity. Additionally, there is a risk of third-party interception of sensitive data, which contributes to considerations about the necessity of educating children about safe internet use and the skills to protect their online privacy. Therefore, although information

and communication technologies are valuable tools in the process of children's development, responsible and monitored use is necessary. Thus, harmoniously combining technology with other methods of learning and play is crucial to ensure a balance between the virtual and real world (Klichowski, Pyżalski, Kuszak, Klichowska, 2017).

Modern information and communication technologies (ICT) also open up new possibilities for children with special educational needs, allowing the adaptation of the teaching process to their individual cognitive abilities. Educational applications and tools can be designed to support the development of skills in children with various types of disabilities. Thus, ICT can be an important tool in the process of creating an inclusive educational environment, enabling children, among other things, to actively participate in classes and develop competencies tailored to their individual needs.

Technologies supporting language and literacy skills

The educational environment of the 21st century offers a wide range of technologies that effectively support the development of reading and language skills among students. These tools include educational applications and audiobooks, which through their innovative and modern teaching methods contribute to the development of the mentioned competencies.

Among these tools, educational applications are one of the most effective means of supporting the linguistic development of young learners. Their interactive and user-friendly graphical interface significantly enhances their reception among students, thereby helping to expand vocabulary, improve reading skills, and develop grammatical skills.

One of the highlighted applications supporting the learning of the Polish language, tailored to the youngest students, is *Duolingo* (Wagner, 2020). Initially focused on foreign language learning, the application later expanded its offerings to include the Polish language. This educational program is available on various devices such as smartphones, tablets, or laptops, which increases its applicability. The application offers a wealth of diverse games, quizzes, or logical puzzles designed for the youngest participants in the learning process. In addition to learning new words, users have the opportunity to learn grammar and develop skills in fast and error-free reading. Among the activities, users can solve word puzzles, solve colorful quizzes, or participate in real-time online competitions. An important aspect of Duolingo is the ability to adjust the learning pace to the individual needs of each student, which undoubtedly serves as a motivating factor for self-education (Garcia, 2013) and, in combination with traditional teaching methods, translates into significant achievements in reading and writing skills (Vizcarra Bazan, 2022).

Headsprout Early Reading is an advanced educational tool designed for the youngest students to improve the reading learning process (Layng, Twyman,

Stikeleather, 2003). The application offers interactive and personalized experiences, allowing children to participate in various activities, interactive stories, and educational games aimed at developing reading skills. A distinguishing feature of *Headsprout Early Reading* is its ability to adjust the learning pace to the individual predispositions of each student, contributing to the effective assimilation of the material (Tyler, Hughes, Wilson, Beverley, Hastings, Williams, 2015). The program stands out for its progressive level of difficulty, which is dynamically adjusted to the student's progress, making the exercises tailored to the student's current abilities. It is worth emphasizing that the application supports the child's education in cooperation with parents, further strengthening the teaching process. *Headsprout Early Reading* is also universal, available on various platforms such as smartphones, laptops, and desktop computers. This tool not only facilitates the learning process but also allows parents and teachers to actively track children's educational progress. Through various reports, both parents and teachers gain detailed analysis of the effectiveness of students' task-solving.

Enriching the educational process, the application meets the dynamic requirements of today's educational standards (Plavnick, Thompsan, Englert, 201), and its effectiveness in preschool and early school education stages, associated with significant improvement in reading skills, has been demonstrated in many empirical studies, both in groups of children with special educational needs, including specific learning difficulties or autism spectrum disorder (Storey, McDowell, Leslie, 2020; Thomas, Grindle, Totsika, 2023; Thompson et al., 2022), as well as in groups of children with harmonious development (Twyman, Joe Layng, Layng, 2011).

An equally interesting alternative to traditional education is the use of the *ABCmouse* application. It is a comprehensive educational platform designed to support the youngest students in developing reading and writing skills. Similar to *Duolingo*, the application allows exploration of the virtual world through solving various tasks (Thai and Ponciano, 2016). This approach aims to achieve a comprehensive development of students' language skills, and the applied elements of interactivity make the teaching process attractive and adapted to the needs of contemporary early school education students (Ponciano, 2014), which is confirmed by the results of large-scale quasi-experimental studies, emphasizing that the number of educational sessions conducted using the platform during preschool education is a strong predictor of high achievement in reading, writing, and mathematics skills at the beginning of early school education (Thai and Ponciano, 2016).

Another application worth mentioning is *Endless Alphabet*, an innovative educational tool that introduces young users to the fascinating world of animated characters and stories. In addition to its attractive visual appeal, the application offers a rich array of exercises to support the learning of writing and reading skills (Duckworth, Ade-Ojo, 2015). It is particularly tailored for students at an early stage of education, introducing them to the captivating world of letters and words.

Endless Alphabet engages young users through various educational exercises where they solve puzzles leading to the discovery of individual words and then entire sentences as the difficulty level increases. Like other applications, *Endless Alphabet* allows for adjusting the difficulty of challenges to the user's age, making it an interesting and developmental learning environment (Neumann, 2018). Besides the benefits related to developing language skills, the discussed application also creates positive learning experiences, stimulating students' intrinsic motivation to continue working on their skills at an early stage of education. The application not only supports the development of language skills but also shapes a positive attitude toward learning, which can contribute to further engagement in the educational process.

ToonTastic, in addition to the aforementioned applications, deserves special attention. It is not only a tool for creating animations but also an inspiring creator that stimulates the development of language skills, critical thinking, and the ability to organize work for students (Sam, Hashim, 2022). Children take on the role of creators, crafting visual stories based on their own ideas and narratives. During the creation process, they describe their experiences and interpretations of stories to their peers, simultaneously expanding their vocabulary (Salgado, Doria, 2019). Storytelling through animation not only develops language skills but also enables children to convey their thoughts in a way understandable to a diverse audience. *ToonTastic* is not just a technological tool but also an interactive space for developing language skills through creative self-expression.

In the context of supporting language and reading skills, audiobooks can be an extremely valuable tool, bringing with them a range of educational benefits. They are audio recordings of books or other texts, with the characteristic feature of being able to listen to the narration of the text by a selected reader or actor (Moyer, 2012). They can serve not only as significant educational aids for visually impaired students or children with visual perception disorders but also support the development of listening skills and skills related to attention concentration, particularly in terms of vigilance and selectivity. Listening to audiovisual content not only stimulates the sense of hearing but also intensively develops imagination. Moreover, children, by using various audiobooks, can develop the skill of perceptually differentiating sounds, which has a significant impact on the development of their language skills. Audiobooks also provide children with the opportunity to broaden their intellectual horizons by listening to diverse stories, narratives, or educational programs. It is also one of the ways to expand vocabulary by learning new words, which in turn can contribute to the development of interpersonal skills. Finally, listening to audiobooks allows for recognizing various speech styles, accentuations, speech rates, or dialectical differences and enables students to familiarize themselves with linguistic diversity (Walter, 2023). Additionally, audiobooks require the creation of visualizations solely based on sounds, which promotes the development of creative thinking (Chimicz, 2020). Therefore, it is a tool that not only develops

listening skills but also stimulates imagination, expands vocabulary, and supports the development of creativity and independent thinking.

The importance of caregivers' digital skills.

The development of students' language and literacy skills in the context of using ICT is not solely determined by the methods used during school classes. Equally important in the process of supporting children's skills through ICT are the digital competencies of caregivers (Gop, Jaskólska, 2020), which are typically measured in empirical research using tools such as self-assessment questionnaires, surveys, interviews, and observations of parental behaviors related to technology.

Parents with digital competencies, similar to teachers, demonstrate the ability to consciously choose educational materials tailored to the age and abilities of their children. Thus, they have the ability to make a reliable assessment of the usefulness and quality of various educational applications or e-learning platforms that their children may use, taking into account factors such as age or level of proficiency in a given subject (Siadak, 2016). Caregivers who are not digitally excluded actively participate in the educational process, engaging in assigned tasks and independently organizing didactic situations at home, promoting the development of children's reading and listening skills (Kmiecik, 2021). This is reflected, among others, in research related to the (post)pandemic transformations period, when the involvement of parents in children's education, largely taking place in hybrid or online forms, became particularly significant (Śmiechowska-Petrovskij, Dycht, Kuracki, 2023).

Moreover, parents with knowledge and skills in the use of ICT can continuously monitor the educational progress of their wards and implement appropriate remedial strategies, thus ensuring adaptation to individual learning needs. Digitally competent caregivers can also ensure the online safety of their children by easily monitoring the time and quality of content browsed by them using appropriate software (e.g., *Norton Family*, *Net Nanny*, or *Kaspersky Safe Kids*). It is also worth emphasizing that the digital skills of parents are an important element of effective communication between parents and teachers. Regular online correspondence between parents and teachers allows for ongoing updates on the child's progress and difficulties, without the need to wait for direct contact with the teacher during school meetings or relying solely on symbolic assessment. In this way, they can develop an effective plan to support their child's educational work and actively participate in building educational partnerships (Kuracki, 2024).

In the context of children with disabilities, the digital competencies of parents play a crucial role in adapting education to the individual needs of their children. Parents with digital skills can make use of specialized tools and applications that support the language and literacy development of children with various types of disabilities. Moreover, they are able to monitor their children's educational

progress more effectively, allowing for quick identification of difficulties and adjustment of teaching strategies. With this ability, parents can also collaborate with teachers and specialists by providing them with information about the effectiveness of different teaching methods and suggesting possible modifications (Kuracki, 2022). A competent parent in terms of ICT usage is therefore a parent who is aware of both the needs of the young person and the threats lurking for them in the virtual world (Tomczyk, Srokowski, 2016, p. 29).

The implications for pedagogical practice

In the dynamic context of 21st-century schools, the development of information and communication technologies implies not only change but indeed a revolution in educational processes. The integration of these technologies into every subject area is becoming not only a preferred but a necessary practice, which entails the need for a thorough redefinition of teaching standards. In this light, there is a need for parent psychoeducation, aimed at providing them with the knowledge and tools necessary for making informed choices regarding educational content for their children, as emphasized by Hnatiuk (2019).

Additionally, it seems particularly worth considering the introduction of instructional classes aimed not only at developing interpersonal skills and digital competencies in students but also at ensuring effective education. However, a key aspect of this process is the skillful and responsible use of technology to avoid potential risks to students, as underscored by Sysło (2009). Therefore, it is worth considering the implementation of training systems for teachers focused on the proper use of information and communication technologies.

The role of caregivers, especially parents, becomes equally crucial in supporting the development of children's reading and language skills. Digitally competent parents have the potential to actively monitor their children's progress, fostering a harmonious environment supportive of the learning process. From this perspective, digitally competent caregivers become a key element connecting the teaching process at school with learning at home, in line with the research of Baran et al. (2016).

Educational apps such as *Duolingo*, *ABCmouse*, *Endless Alphabet*, *Headsprout Early Reading*, or *ToonTastic* present themselves as extremely attractive and effective tools for supporting the linguistic development of young learners. With their variety of exercises, quizzes, and puzzles, they constitute a significant element supporting the educational process. Therefore, it is worth considering their inclusion in school practice, with simultaneous consideration of the need to adapt them to the specifics of teaching. Regarding audiobooks, their potential as support for activities related to developing concentration and listening skills is significant. Listening to various content provides students with the opportunity to develop

interpersonal skills, creative thinking, and the ability to independently create visualizations of the stories being told.

Moreover, assisting technologies such as interactive whiteboards or writing learning programs on tablets have the potential to adapt to different types of disabilities, supporting the development of language and writing skills in children with physical or sensory limitations. However, to fully harness the potential of these technologies, it is essential to implement a teacher training system that takes into account the individual needs of students.

In summary, effective use of information and communication technologies in school practice, in collaboration with digitally competent caregivers, can significantly contribute to the holistic development of students' language skills. Maintaining a balance between modern technologies and traditional teaching methods is as important as creating an inspiring and safe educational environment. Achieving this goal requires not only the commitment of teachers but also the active role of parents, whose psychoeducation becomes a key element in supporting the educational development of children in the face of contemporary technological challenges.

Conclusion

Modern technologies, represented by the mentioned educational apps and audiobooks, are fundamental tools that support the development of children's language and reading skills. The significant benefit of their implementation is not limited to user-friendly interfaces or attractive visual elements. A key aspect is the ability to personalize the learning process, enabling the adjustment of teaching pace to individual student needs.

The challenge facing the modern 21st-century school is the effective integration of these technologies with traditional forms of teaching. Despite the presence of innovative teaching aids, handwriting in notebooks, reading traditional books, and participating in class discussions still play a fundamental role in early education. The concept of synergy between traditional educational approaches and modern technologies allows for flexible adjustment of the educational process to the unique needs and predispositions of each student. Such integration creates an educational environment that comprehensively prepares future generations for the complex challenges associated with language and reading skills.

The use of information and communication technologies in education is not limited to increasing student satisfaction with modern teaching methods. More importantly, it enables more effective, dynamic, and adaptable teaching methods that evolve with changing realities. The integration of ICT with traditional educational approaches generates a synergistic effect that promotes comprehensive development of language and reading skills among young learners.

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