



## Benefits and limitations of using information-communication technology (ICT) in English lessons in primary school – literature review

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### Abstract

*The new core curriculum of foreign language education for primary school in Poland states that the main goal of education is the ability to communicate effectively, both in speaking and writing. To achieve this goal, the curriculum emphasises the significance of using authentic materials and information-communication technology (ICT) in English lessons.*

*The paper aims at analysing both the benefits of using ICT and its limitations. In the introduction, the author describes core curriculum for primary education highlighting the necessity to develop key competencies among pupils and points out to those fragments that indicate the importance of ICT in foreign language education, defines what ICT exactly means as referred to education, and gives some examples of technology-based tools and materials. The article also list developmental features of early education pupils and explains what it means for foreign language learning. Later the features of so-called ‘generation Alpha’ or ‘Digital Natives’ are listed and clarified. Finally, the paper presents the benefits and drawbacks of using ICT in foreign language teaching and learning. The author concludes with specifying the challenges English teachers as ‘Digital Immigrants’ must face in teaching students who belong to a different generation and enumerates the new roles educators must adopt in order to successfully tutor children.*

**Keywords:** *early education, key competencies, ICT, benefits and limitations, Digital Natives*

### Benefits and limitations of using information-communication technology (ICT) in English lessons in primary school – literature review

Marc Prensky (2001), an American writer and speaker on education, said: “Our students have changed radically. Today’s students are no longer the people our educational system was designed to teach”. The article aims at providing a short characteristic of a typical primary school pupil both from the perspective of their developmental condition, as well as from a sociological angle describing them as representatives of so-called ‘generation Alpha’ or Digital Natives. The paper also addresses the issue of incorporating ICT (information-communication technology) into English language lessons in order to facilitate the process of teaching and learning and answers the questions whether including modern technologies is relevant to students’ needs and has a positive outcome in their education process.

### 1. Language teaching and learning on primary level

Governments of European countries have drawn several key competencies as the framework of life-long learning. These competencies are: communicating in both mother tongue and foreign language, skills at the field of mathematics, science, and information technology, the ability to learn, being a good

citizen, initiative, and cultural awareness. When describing four important areas of 21<sup>st</sup>-century education, Justyna Sala-Suszyńska (2017) emphasizes developing key competencies as the main aim of contemporary education. In order to advance these skills and abilities, education cannot focus on its final effect (being in most cases exams), but must be treated as a continuous process, paying attention to topics and issues which are crucial in the contemporary world. To do so, educators should implement tools and methods close to students’ experience and place learning in a meaningful context, aiming at equipping their students with digital literacy, which Nurzhanova et al. (2018: 61) defines as “the skills of searching for, discerning and producing information, as well as the critical use of new media for full participation in society”.

### 2. Developmental and sociological characteristic of primary students.

Early education period means huge progress in pupils’ cognitive, emotional, and social growth.

In the first sphere, we can observe great sensorimotor activity and therefore, the importance of visual, auditory, kinesthetic, and tactile perceptions. Children’s attention span becomes longer and a child can concentrate on an issue in a more conscious way. This period is also a real breakthrough in the



development of child's memory – there is a transition from mechanical to logical processes and from unintentional to intentional remembering.

Early education is also the time when students grow emotionally. At the beginning, they react spontaneously, but gradually they learn how to control emotions and express them verbally rather than behaviourally. This shift is connected with social context – children stop concentrating on themselves and start to be able to collaborate with their peers. But it is not peer, but teacher's approval that plays a crucial role in shaping pupils' motivation. Motivation is a key factor in developing personality and in this period, it might be the teacher's responsibility and their merit to form and consolidate students' involvement in learning a foreign language.

The above-mentioned milestones in students' development have their implications for foreign language learning<sup>1</sup>. First of all, teaching should focus on improving children's visual and auditory perception skills. To do so, activities using information communication technology might be of great usefulness. Secondly, it is vital to use tasks involving all senses to present and practise new material. Thus, pupils should have the possibility to watch, hear, move, touch, or even taste things. Additionally, foreign language classes must be based on demonstration – in this age, children learn better by associating real-life items with their verbal representation. As they are hardly able to think in an abstract way, learning should be held in a specific situational context, similar to their everyday life, for example through playing, games, drama, competition. Taking into account pupils' short attention span, teachers must remember about changing activities quite often. Tasks need to be short and varied so that children will not get easily tired or bored. Having in mind the fact that children tend to forget things quickly, new material must be regularly repeated and revised. Finally, it has been mentioned that building up motivation is very important during early education. In fact, young children do not understand the communicative value of learning a foreign language since they have not fully mastered their mother tongue yet. They will neither see how useful the knowledge of foreign languages might be for them in the future. Therefore, teachers must work hard in order to create friendly learning environment in which children will develop their liking for the subject and the language itself.

When we read about children aged 7 – 10 / 11 nowadays, we may encounter the term "generation Alpha". After generation X or Y, it is the era of people born after 2010 – the first generation born within the 21<sup>st</sup> century, the generation to grow up with new technology surrounded by all the tools of the digital age – computers, video games, cell phones, etc. They are called, after Mark Prensky, Digital Natives – "native speakers" of the digital language of computers, video games,

<sup>1</sup> The implications quoted after Wieszczyńska, E. (2009). *Psychorozwojowe uwarunkowania wczesnej edukacji językowej*, w: Sikora-Banasik, D. (red.). *Wczesnoszkolne nauczanie języków obcych. Zarys teorii i praktyki*. Warszawa: Centralny Ośrodek Doskonalenia Nauczycieli, s. 40 – 50.

and the Internet. Maciej Dębski (2017), basing on source literature and research conducted among Polish students, provides a detailed depiction of 'Internet kids'. Most strikingly, they are people entirely immersed in virtual world. **They live in the moment.** They have little sense of the past and no concept of the future. They want everything now, living with 'fear of missing out' (FOMO). They do not differentiate the world into online and offline, for them what is online is real. They do not know the world without modern technology and social media, so they do not know how to exist lacking access to the net. They work and rest in permanent presence of digital and mobile devices. What is more, they feel emotionally attached to them, being driven by constant desire to have a better model, resigning from everyday pleasures to achieve this. Having been born 'with a smartphone and laptop', contemporary children have different (and higher) digital competencies than their parents. They do things naturally, effortlessly, and immediately, often giving a helping hand to adults. 'Alpha kids' also have different pattern of communication. They are not used to waiting for a reply as for them 'to communicate' means to send a receive a message in no time. Prensky (2001:2) adds some more features to this description, emphasizing that "[digital natives] like to parallel process and multi-task. They prefer their graphics *before* their text rather than the opposite. They prefer random access (like hypertext). They function best when networked. They thrive on instant gratification and frequent rewards. They prefer games to 'serious' work". But living in the modern world does not only mean living 'now and here' and using new means of communication. It also means that primary school children nowadays constitute the generation with depressed mood – spending a great amount of their time in the net, they have difficulty with concentrating, which leads to problems with schoolwork. They also lose interest in after-school life and frequently complain about dizziness, nausea, or eyesore. They thrive when being connected and wither when being offline, experiencing 'fear of missing out' (FOMO). Children suffer from cyberstress – they feel it is vital to charge their phone, check notifications, and share details of their everyday lives.

### 3. Using ICT on English language lessons in primary school.

The advent and development of new technologies have brought about challenges in all walks of life including education. It means that the aim of teaching and learning had to be redefined in order to meet the needs of new generations since, as Rüschoff states it, "our society has become a knowledge society, where information globally networked and more freely accessible than ever before needs to be processed and transformed into knowledge by those working within a technology-enriched environment". Rüschoff continues "Education and teaching in the knowledge society can no longer be reduced to „the act, process, or art of imparting knowledge and skill“ as Roget's Thesaurus proposes, but learning must be recognised as an act in which a learner plays the role of an active constructor of knowledge. Criteria based on such principles need to be considered when

evaluating the effectiveness and value of technology-enhanced materials for language learning". According to Agata Hoffman, 2009b: 258) incorporating ICT into the foreign language curriculum assumes and aims at shaping innovative attitudes in order to bridge the gap between humanities and sciences, preparing students for autonomous learning, taking responsibility for the future, emphasizing the importance of tolerance and respect towards other cultures.

Nowadays there are quite many types of ICT tools which can be easily used during English language lessons. Rüschoff divided them into 5 categories. The first one is materials specifically designed for self-study and self-access. Although their formula is similar to this of traditional origin, like matching or reading and reconstructing the text, these are the elements of modern technology that facilitate the process of learning, especially for primary school students since such exercises include components of online interaction, watching and listening, touching or even game-like activities. It particularly caters for the needs of children aged 6-10 who experience the world with all their senses. The second group of ICT tools are authoring tools. These are ready-made templates which teachers simply fill with the content that is being discussed and the authoring tool automatically design an interactive task. An important thing is that teachers do not need any knowledge of programming to create tasks which are directly intended for a particular target group. The exercises might be used during lessons but also set for homework. Another grand category of electronic materials are electronic publications and resources. The Internet offers both teachers and learners, a vast array of authentic language activities, such as encyclopaedias, dictionaries, newspapers, etc. What is important is the fact that some media companies offer teachers support in form of services in which their publications are adapted to the needs of learners of different age groups and language levels. Such services are for example provided by *Newsweek* or BBC. A further group of electronic tools are those that "combine the flexibility of word processors with prepared routines for analyzing and adapting such [authentic] texts for use with specific target groups" (Rüschoff: 10) offered by educational publishers (e.g. *Toolbox, Text Aktiv*). They are of great benefit for language teachers since they facilitate the process of lesson preparation. Teachers are able to design activities that are suitable for specific students in terms of the level of difficulty, length, key vocabulary, or grammar structures. One class of materials that has not been explored thoroughly and used widely yet is so-called 'concordancing software' which may be a basis of data-driven learning. By using tools which were originally designed for scholars working on language corpora students may focus not only on individual words but also on e.g. their grammatical features, possible collocations, etc. Finally, the tool which is developing the most quickly and which children love is telecommunications. For language learning it means that students can improve and share their knowledge with their peers from the same class, country, or from abroad. It does foster education, but also promotes intercultural

cooperation and leads to the establishment of intercultural competence.

The rapid development of ICT has had a great influence on language teaching and learning, making it more effective, promoting quality and equality, and allowing the process of education to be "structured in different ways – in a classroom or at home, with or without a teacher, emphasizing or minimizing grammar, gradually exposing the student to native speakers or prompt immersion" (Nurzhanova et al. 2018: 59). Prior to using technology during the lesson, educators need to bear in mind the question whether it is 'developmentally appropriate'. 'Developmental appropriateness' is achieved when activities are designed in such a way that they "challenge children within their "zone of proximal development" – the area of difference in performance between what a learner can accomplish unassisted and what they could accomplish with the assistance of a more knowledgeable or capable other" (Bolstad 2004: 27). One of the projects to ensure 'developmental appropriateness' was the DATEC (Developmentally Appropriate Technology in Early Childhood) project in the UK<sup>2</sup>. It offers general guidelines for teachers to assess whether the tasks and materials are suitable for students of different ages. There are eight such principles and they include: ensuring educational purpose, encouraging cooperation, integration with other aspects of the curriculum and placing it in a meaningful context, allowing the child to be in control, choosing applications that are transparent and intuitive, and avoiding those that contain violence or promote prejudice, being aware of health and safety issues and encouraging the educational involvement of parents.

Why to bother with incorporating ICT into foreign language teaching and learning? It is inevitable because information-communication technology does already exist and matter in early childhood education. Firstly, technology has become an inseparable element of the surrounding world. Even if it is not children themselves that make use of technology, it does have influence on people from their closest background, such as parents, teachers or other caregivers. In addition, ICT provides significant opportunities to reinforce many areas of early childhood education. They include "opportunities to support and enhance children's learning and play experiences, opportunities to support and strengthen practitioners' professional learning and development and opportunities to support and strengthen relationships and communication between early childhood centres, parents, and other people connected to the early childhood education setting" (Bolstad 2004: 2-3). Finally, ICT has become an important part of school curricula around the world and digital literacy is now

<sup>2</sup> Siraj-Blatchford, J., & Siraj-Blatchford, I. (2002). Developmentally appropriate technology in early childhood: 'video conferencing'. *Contemporary Issues in Early Childhood: Technology Special Issue*, 3 (2), 216-225.

one of the key competencies children need to acquire throughout their learning.

When it comes to putting ICT to use on English language lessons, one needs to remember that technology-based and online learning is guided by several principles which are entirely different from the traditional patterns of learning. McLuhan (2012) makes a list of these guiding rules. Modern education, including e-learning, puts emphasis on process rather than product, interaction rather than action, social rather than individual bonds. The content of teaching and learning materials is individualized and personalized. It is no longer essential to know everything, but one needs to be able to do things. Learning is freed from prejudice, it is age and gender-neutral, it is about fun and motivation. It moves back to its origins, from writing to pictures and images.

### 3.1. Advantages of using ICT on English lessons in primary school.

There are certain benefits of incorporating ICT into foreign language lessons. First and foremost, motivation is a key factor in the development of children in early education. As students starting to learn a foreign language find that technology-fostered activities is something that they can do, their willingness to learn increases, generating their enthusiasm and commitment, at the same time not discouraging them from getting to know more difficult and thus challenging material. What is more, as it is known, early education is the period of great sensimotor activity. It means that children cannot learn by sitting by the desk, copying information from the blackboard or their coursebooks. To gain knowledge they also need to listen, move, or touch. Multimedia can present information in a variety of ways – with pictures, graphics, charts, sound effects. To do the task children might also be asked to stand up, touch the screen of their interactive whiteboard, navigate with a joystick, or wave their hands. Activities that engage different senses may be an attractive and effective way of introducing new material since they are associated with novelty and creativity, as well as an excellent method to revise previously learned things. Moreover, ICT-based teaching and learning promotes inclusion, being understood from two different perspectives. On the one hand, students with either limited ICT skills or poor language abilities can use activities that require skills and knowledge compatible with their network literacy or language level and then present and share their work, which positively influences their self-esteem and motivation. On the other hand, ICT provide opportunities for children with special education needs, catering for children with different, more and less serious, disabilities. Children having problems with reading and writing will find different word processors with spell-checkers and speech feedback useful. For visually impaired or blind pupils there is special Braille-translation software, children can also use Braille keyboards to create written assignments. Students can also be provided with larger font sizes than their peers. Hearing-impaired pupils can gain knowledge in visual form, mainly thanks to multimedia presentations. Children with poor motor skills may also

benefit from using ICT. Those who are unable to handwrite may use word processors to type their work. There are also special pieces of hardware that facilitate learning, for example, overlay keyboards, trackerballs, or joysticks. But still, disabled kids work on the same material and do the same tasks as their able schoolmates. One of the key competencies citizens of the contemporary world need to acquire is independence. Using ICT on foreign language lessons promotes students' autonomy. They are able to learn at their own pace and gradually build up their own knowledge, not by passive repetition, but by active acquisition and participation. Information communication technology also has its practical aspect. It allows students to consolidate the material which they have already learned through an array of interactive activities available in the Internet. But it also lets teachers control students' progress, for example, thanks to online test. Doing such test students get instant feedback – they immediately know where they have made mistakes and correct answers are shown, sometimes followed by short explanation. But feedback can be obtained not only via taking tests. It also means that computer programmes and Internet activities are more learner-friendly – they can be adapted to suit particular students' needs and their level of language. They are also set in authentic context, which means that students can use the language in a natural and meaningful way. Language activities are based on cooperation and collaboration with one's peers, which means that it is no longer the teacher who is students' audience, but other people of their age, either in the classroom or in front of the screen somewhere in the world. With this in mind, children are more focused on conveying the meaning and pay more attention to e.g. punctuation, spelling, use of vocabulary, or appropriate grammar structures. Another great advantage of using ICT, and especially the Internet, is developing 'network literacy', namely the skills of searching, interpreting, and organizing information. Some researchers also emphasize the fact that the Internet, which is the most widely recognized medium in ICT content, is so powerful because it is cheap. Books for learning foreign languages are rather high-priced and travelling to English-speaking countries is not affordable for everyone. It is also worth mentioning that information communication technology has no borders, which promotes tolerance and develops intercultural competence. As McLuhan (2012) states it, "learners form diverse geographic, social, political and religious backgrounds gather in the common language learning arena".

Marshall McLuhan (2012) provides a concise but yet accurate summary of eight main advantages of using ICT in language learning and teaching. They are unlimited *access* from every corner of the globe and 24/7 (*durability*), *flexibility* to learn the language when one wants and where they want, instant *response* with meaningful feedback, *repeatability* until the student is satisfied with their progress, *multi-modality* stimulating all senses, *specificity* in being tailored to the language learner's age, level and needs and low or no *cost*.

### 3.2. Disadvantages of using ICT on English lessons in primary school.

Although most researchers stress the benefits of integrating information and communication technology in teaching and learning, it also needs to be highlighted that there are certain drawbacks connected with it. Some concerns are general, related to the use of computers as such. Obviously, prolonged work with ICT may have harmful physical influence on pupils, affecting their eyesight or body posture. It might also have negative effect on children's social development, for example causing aggressive behavior or leading to isolation and an inability to differentiate between online and offline world. Using a computer may limit or disturb continuous relationship between an adult and a child, in this case, a teacher and a learner. As it has been shown, it is the teacher who is the role model and the source of motivation for pupils in early education. If they are deprived of their mentor, their motivation to learn might decrease dramatically. Using technology in excess might become boring, again having negative influence on students' willingness to learn and it may also lead to intellectual laziness interfering with some aspects of children's cognitive development. Practitioners and parents are also concerned that when working with the Internet children might be exposed to unsuitable content, for example including material with sexual or violent message or promoting gender intolerance or prejudice against some nations, religions, or cultures. More specifically, within the area of education students may be discouraged by some computer programmes or courseware which is not as attractive as computer games they are accustomed to on daily basis, and sometimes not compatible with their experience presenting outdated concepts or contents. Pupils may also be confused while doing online activities since their answer might be treated as incorrect because it is extremely difficult for material designers to predict all the possible solutions to language tasks. Some drills can be more difficult for children to do with a computer. Pupils in early education have poor keyboarding skills, so typing might be time-consuming and bothering. Additionally, reading from the screen is certainly more difficult than reading from a printed paper. Doing exercises of the same type may lead to the automatization of learning process, resulting in students giving random answers. Finally, some online exercises lack in the element of social interaction.

Using ICT might be challenging not only for students but also for teachers since it demands from them more specific skills. Some educators, especially those approaching retirement age, have minimum exposure to and almost no experience in using ICT in language teaching, and as such they are reluctant to implement it into their education process, neglecting the requirements of modern times and contemporary curricula.

### 4. What is the role of the teacher in the 21<sup>st</sup>-century education.

Marc Prensky calls children born after 2000 Digital Natives and refers to teachers as Digital Immigrants who speak an outdated language and teach the population that speaks a totally different jargon. They teach the same way they learned

– slowly, step-by-step, one thing at a time, individually, seriously. This means that if they want to be successful in virtual world, they need to rethink their teaching and adopt a new role. Teachers are no longer experts who know everything and decide what students should know. In fact, children often know more about computers than educators do, so teachers should know how to look for information and verify it and be able to share this knowledge with their students, encouraging them to seek new data, but also check it, compare different viewpoints, questions the reliability of their sources, and make judgements about their validity. Teachers themselves need to become more independent, more open to new sources and alternative teaching approaches, more flexible in their teaching. They are no longer experts, they have become more of mentors and coaches, showing the route, but letting students overcome obstacles themselves. Educators also need to understand that classroom is no longer a symbol of education. Teaching and learning have broadened beyond the classroom and the school, letting the world be the classroom. Educators have to approve of the fact that pupils can use a foreign language in interaction with their peers outside the classroom, as well with adults other than tutors. Education is also no longer the matter of a situation happening in the same place, at the same time, with the same person. A new learning space has come to existence, either in the same or different place, the same or different time, individual or group. Teachers must also apply a new approach to teaching - a problem-solving approach – and plan education process in such a way that students can solve tasks themselves by doing experiments. To be successful, contemporary educators should reconsider both methodology and content. In terms of methodology they to learn their students' language, which implies going faster, less step-by-step, more in parallel, with more random access. Secondly, they have to rethink content, both 'legacy' and 'future'. 'Legacy' content is about "reading, writing, arithmetic, logical thinking, understanding the writings and ideas of the past, etc. – all of our 'traditional' curriculum" (Prensky 2001). It does not mean that schools should stop teaching these skills. It means that we should teach those elements of curriculum that are still vital in the contemporary world, but they should be taught in a new way. On the other hand, we should dispose of those aspects of subjects that are not compatible with the modern way of living. 'Future' content refers to technology and it imposes an obligation upon teachers as they themselves have to learn how to use it wisely and effectively to be able to share this knowledge with their students.

### 5. Summary

Today's world brings about numerous challenges for its inhabitants, both young and adult. These challenges require changes in different walks of life, education among them. What used to be important in the past is no longer valid. Nowadays students do not need to be equipped with pure knowledge, they have to know how to gain this knowledge, where to seek it and assess it, but most significantly, they need to be able to do things, to be autonomous but at the same time capable of collaborating with others, to show initiative

and cultural sensitiveness, to be good citizens. These key competencies have become parts of curriculum, which also highlight the importance of information-communication technology in acquiring them. Pupils that attend primary schools these days are still to some extent similar to their peers a few years ago. They are still more interested in acting than sitting at the desk, they like to experience the world with all their senses, they need to be highly motivated to learn. They also cannot concentrate for a longer period of time and are more focused on themselves than others. But they are also completely different from generation X or Y. They do not know the difference between online and offline, do not know the world without technology, want instant access and immediate gratification. It is the role of educators to take advantage of these new features of Digital Natives in order to teach them successfully. This can be done with the help of ICT as it offers everything that young people may require – it gives motivation, fast feedback, the opportunity to collaborate with others, it is practical and caters for our creativity. Nevertheless, if not used in an appropriate way, it might also be the source of insurmountable problems. Children may suffer from health issues, be victims of cyberviolence, become discouraged, or use knowledge automatically or unwisely. That is why, it is not only curriculum that must be reconsidered, but teachers themselves need to rethink their role in modern school. Teachers are no longer experts at their fields who offer students ready-made recipes, analyze if they have mastered the material, and assess their progress. Educators need to accompany students in the process of gaining knowledge (as learning has become more of a process than a product), being mentors, not authorities. They must also become more autonomous and independent themselves since the new approach to teaching involves unfolding the new, not getting it straight off.

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