



The use of new technologies in education – opportunities, risks and challenges in the times of intensive intercultural change

Abstract: This study comprises an analysis of the school education system in the context of using modern technologies. Its main goal is to present the benefits and limitations associated with the implementation of modern technologies in the school environment. Two fundamental questions will be asked: 1) What are the effects of using new technologies in education, including intercultural education? 2) Can modern technologies pave the way for implementing the ideal of education as an activity aimed primarily at shaping an individual capable of effective and creative adaptation to the social reality in which otherness, including cultural otherness, is common? The authors indicate the types of implemented technologies and assess their impact on adapting students to the extracurricular reality. Referring to the source data and postulates of the contemporary pedagogical and sociological thought, the authors highlight the topicality of the message requiring from the school the activation and development of students' competencies that will be effectively and creatively implemented in their future professional and social life. It should also be noted that education takes place in cyberspace as well, especially when it is related to the use of modern technologies, which is why great importance should be drawn to cybersecurity.

Keywords: education, new technologies, cybersecurity, interculturalism, ideal of education

Introduction

Contemporary societies, including the Polish one, can be described as systems of highly specialised institutions and units in which education plays a special role. It consists not only in the formation of human life abilities

which, on the one hand, will make one mature, critically thinking, and capable of full participation in social life (Digioacchino et al., 2016), but on the other hand, will equip one with the skills to flexibly and effectively adapt to unplanned changes and difficulties (Arcalean & Schiopu, 2009). The COVID-19 pandemic has particularly tested the adaptability of people and entire systems, including education. The literature on the subject suggests that education, especially intercultural one, fulfils two basic functions: socializing and liberating. The former consists in the socialization of a person, which makes one capable of living in a group, expressing emotions, and resolving conflicts. The latter is to teach one to liberate oneself from different environments, especially when one's expectations are illegitimate. The liberating function is also to enable a person to creatively develop their own agency, new practices and forms of social and individual life (Freire, 1972). Such an understanding of education, combining the formation of human identity with one's natural, creative development, refers to some extent to the thought of Florian Znaniecki and his ideal of education. Observing the growing complexity and the changeability of social life, Znaniecki advocated the idea of education preparing for socio-cultural life in general, not for participation in one or another group (Adamczyk, 2013). In particular, Znaniecki had in mind the cultural system into which learners should be introduced, and the social role for which they are prepared. However, this is not only about preparing the individual for later social roles. First of all, it is important to form a creative individual, who is able, after completing their education, to find themselves in the social reality and creatively change this reality. Therefore, the educational environment should be more or less similar to the ideal image of the cultural system of the educational group, which should be adopted by the learner during education (Kukla & Mielczarek, 2020). Therefore, modern formal and informal education should adapt to a much greater extent modern technologies that have settled in so many important areas of everyday and professional life (Furmanek, 2014). Contemporary education in Poland is subjected to changes not only at the legal level. The didactic process is also gradually changing (due to the rapid development of modern technologies) in order to use them in teaching. Today's schools are fundamentally different from the schools attended by Baby Boomers – 1946–1964, Generation X – 1965–1980, or Generation Y – 1981–1996 (Appelbaum et al., 2005). The changes that education is subjected to are unfavourable for some, for others they are a chance for the school to become a modern and student-friendly place. What are the effects of using new technologies in education?

Can modern technologies pave the way for the implementation of the ideal of education claimed, for instance, by Florian Znaniecki, to be an action aimed primarily at shaping a creative individual capable of adapting to social reality and creative changing of this reality?

One of the objectives of the school education system is the development of learners' creativity conducive to active participation in economic life, including the use of innovative curricular, organizational or methodological solutions in education. Another objective indicated is to develop learners' skills in the efficient use of information and communication technologies. Therefore, modern technologies in education have their legal basis as well (Karpiuk, 2020, p. 278).

Research methodology

The main objective of the analysis is to present the benefits, barriers and limitations resulting from the implementation of modern technologies in the school education system in the context of the creative educational ideal proposed by Znaniecki. Our intention is to answer two fundamental questions: 1) What are the effects of using new technologies in education, including intercultural education? 2) Can modern technologies pave the way for the implementation of the ideal of education as an activity aimed primarily at shaping an individual capable of effective and creative adaptation to social reality in which otherness, including cultural otherness, is common?

In the conducted research, the classic method of cognitive explanation, i.e., the method of analysis was used. The analysis was proceeded in two stages. The first stage consisted in collecting materials to extract the most important data, isolate the most important concepts and, consequently, determine the issues adequate for the research intentions. At this stage, the analytical-comparative method was used. The second stage consisted in the analysis of documents, reports, studies, works, aimed at establishing facts and ideas relevant in the context of the discussed problem, which are modern technologies in school education in relation to the educational ideal of Florian Znaniecki.

Research results

New technologies in schools – where and how are they used? In education, new technologies are used with an increasing frequency (Kuzin, 2018). Ob-

viously, computers with access to the network are the basis. In addition to computers, schools use other technological achievements, including tablets, interactive whiteboards, software, interactive platforms, electronic journals, or books on electronic devices. Modern technologies are used at the level of formal communication, informal communication, and didactics. It seems that computers with Internet access at school are already a standard. Looking at the report “Polska szkoła w dobie cyfryzacji. Diagnoza 2017” [Polish school in the era of digitization. Diagnosis 2017], it turns out that this is only partially true. Modern technologies are not used in schools as often as it is commonly believed because there is a lack of appropriate equipment on which educators and students could work. According to the data presented by the report, every fifth student at school used their own equipment for work in class, and apart from the computer and interactive whiteboard, the most commonly used equipment was a smartphone. Tablets, measurement interfaces, blocks for learning programming, or robots were almost not used in educational institutions (Plebańska et al. & PCG Edukacja, 2017). Unfortunately, the COVID-19 pandemic has also verified the infrastructure of Polish schools. The data from the NIK report showed that from April to May 2020, the Ministry of Education had to launch two projects aimed at reducing the scale of digital exclusion and increasing distance learning opportunities. According to the information provided by schools, some students did not have laptops, access to Internet connection with the right broadband. As part of these projects, the purchase of 137 000 pieces of computer equipment for teachers and students was refunded, 2 400 school multimedia packages (including 60 000 tablets) and 764 mobile computer labs were donated, including 12 224 laptops (NIK, 2021).

Despite the indicated difficulties, computers with access to the network for learning IT, mathematics, foreign languages, or Polish are increasingly in use, and students and teachers appreciate the potential of digital technologies and their impact on increasing the attractiveness, effectiveness of classes, and students' involvement in learning. These devices are used by uploading programs for learning specific subjects and quizzes, e.g., historical or chemical. They are also open to the public for students staying in the library or common room. Thanks to them, students search for information necessary for lessons and they learn independently. Computers can be used by students with learning difficulties, e.g., children and adolescents with diagnosed dysgraphia (Hasselbring et al., 2000). Not without significance is currently the presence of social media, such as Facebook. They allow for associating

students, e.g., by creating discussion groups, interest groups, and providing all participants with information about subsequent meetings or exchanging thematic articles found on the web, using the platform. Thus, they also contribute to strengthening social ties.

Why is the use of interactive whiteboards so important for the quality of teaching? Boards are among the most frequently chosen modern teaching aids. The first advantage is the ability to use this device at all stages of education, from kindergarten to the last grades of secondary school. They make learning easier and more interesting (Sessoms, 2008; Pituła 2021).

The so-called e-books and audiobooks also play an important role in education. E-books in many schools solve the problem of insufficiently supplied libraries and allow students to access the broadly understood literature. Libraries invest in new e-books, which are cheaper than buying many copies of school books. Audiobooks, in turn, are a perfect solution for busy people: they can, for example, clean up and read a book at the same time, and for children who have a problem with reading, e.g. they have a strong sight impairment or are diagnosed with dyslexia. Electronic student diaries have also been introduced in many schools, which are a kind of computer platform that allows for checking student data and their grades. Thanks to this, parents can quickly and easily monitor their children's educational achievements without visiting school. In addition to grades and attendance, teachers can post information on what to prepare for classes, when they plan larger tests, and can add information about a school trip or the next parents' meeting. Universities, in turn, have introduced electronic index books, which are slowly replacing paper ones. An increasing number of schools and higher education institutions offer modern e-learning platforms, including distance learning, practically without leaving home. Abroad, and especially overseas, e-learning is already an everyday reality. Thanks to the use of such tools, one can offer lectures via the Internet, organize online courses and trainings and conduct online lessons. The importance of preparing the educational system for effective e-learning has been proved by the COVID-19 pandemic.

Discussion

The presented data and information indicate two important aspects of the contemporary reality. First of all, the development of new technologies means that nowadays, people have to learn faster and differently, using modern technologies (Pituła 2022). Secondly, the appropriate way of education

prepares to deal with the complexity of the world and the dynamics of its changes and to adapt to changing living conditions (Pituła 2021).

Florian Znaniecki appealed for such a method of education that required education of individuals capable of adaptation and creative presence in the social reality. This is also one of the commonly held statements in the expert literature, according to which schools are places for broadly understood learning and the role of educators is to equip students with the knowledge and skills they need to succeed in the future (Mitra, 2011).

While writing about science, it should be emphasized that it is about the broad context of information and skills that adults already possess and children and adolescents must acquire to use them later in their adult lives (Mishra & Close, 2020). At this point, it is worth defining precisely the functions of contemporary education, which, depending on the theoretical premises adopted by researchers and the applicable socio-political conditions, are defined and treated differently. Nowadays, several basic functions of education are indicated, such as socialization, integration, determining the social position, cultural function and caring one. In the context of the conducted discussion, the socialization function is particularly important.

The role of education in the socialization of each member of the community, regardless of where, by whom, and under what conditions one was raised, is to transmit and consolidate knowledge, skills, and attitudes that will enable communication, interpersonal relationships and general understanding of the environment in which the individual lives. More broadly, the role of education in the context of the socialization function is to teach members of society the (mainly scientific) knowledge, ideological and moral values, abilities and skills, norms of behaviour, the content of which is determined by the social, economic, and political structure of this society and the level of its material and technological development. In this context, the use of modern technologies in education and the instruction on them is crucial. This is important in the context of determining the individual's social position. Education allows for achieving a certain status, getting the right education, and, consequently, allows for advancing in the social hierarchy. That is because education can provide more employment opportunities and, consequently, a better social status of a person, which is difficult without considering digital competencies (Davis, 2021). The integrative function of education is extremely important in the context of modern technologies, digital competencies, and communication (Markowska-Manista, Dobkowska, Balkan, 2023).

School is the first place where a person learns to integrate with others, learns social conventions, and learns the principles of their application. Spending time in classroom, with youth organisations and peer groups, allows for better adaptation to the demands, norms, and principles of the society. Such integration cannot be fully implemented at present if it does not take into account communication based on modern technologies.

The task of education is not only teaching, but also education and care. As noted by Mishra and Close (2020, p. 2), the school's caring function largely allows parents to perform the economic function that is the family's responsibility. The school is also a place of entertainment and recreation, of establishing new bonds, often for the whole life. It is one of the reasons why the transition to remote learning made necessary by the pandemic has proved so difficult for young people. However, it was not only the lack of face-to-face contact with peers that was a negative factor in their overall well-being and academic performance. According to the NIK Report, the following elements had an impact on the reduction of the quality of education, the deepening of educational inequalities, and the deterioration of the psychophysical condition of students and teachers: limited access to distance education due to digital exclusion in the case of students; insufficient level of digital competencies necessary for distance learning among teachers; inability to provide all students with digital access to learning (NIK, 2021). The changes to which the global socio-economic post-COVID reality is subjected, not only in Poland, cause that in the scientific discourse, there are questions about the basic goals of education and their adaptation to the changing reality (Biesta, 2009).

Security in cyberspace (like other types of security) allows not only to meet social needs, but also ensures the uninterrupted functioning of public institutions (Karpiuk, 2022, p. 82). In the case of cybersecurity, an appropriate level of protection of information systems is to be ensured. However, in connection with the need to guarantee such a level, in special cases, there may be restrictions on individual liberties and rights in cyberspace (Czuryk, 2022, p. 34).

Security in cyberspace is a very important element allowing for the efficient performance of public tasks using ICT systems, which must be properly protected against cyberattacks that may, even in extreme cases, prevent the work of the authorities (Hoffman & Karpiuk, 2022, p. 628). It also applies to education as a public task, which can also be carried out through ICT systems, as was commonly seen in the COVID-19 pandemic. It is the duty of public authorities to ensure cybersecurity for all public services, including

those related to education, when provided electronically. Such services are to be publicly available on the one hand, and on the other hand, to be resistant to cyber threats that interfere with their use (Karpiuk, 2021, p. 234). This obligation also applies to threats occurring in education if learning takes place in cyberspace.

Conclusions

What are the effects of modern technologies on the world of education? Modern technologies certainly have advantages and disadvantages. The advantages include the fact that they significantly facilitate education for many groups of people, children, and disabled youth: the blind, hearing impaired, or chronically ill, whose health condition makes it impossible to stay at school. Thanks to modern technologies, they can acquire knowledge in a way that is adapted to their capabilities, using e-learning and special software. Moreover, modern technologies make learning much more pleasant and interesting for students. One can conduct lessons using innovative interactive whiteboards that activate young people, eliminating reluctance while listening to teachers' lectures. Thanks to interactive whiteboards and other similar devices, students take an active part in the lesson and remember more of it. In turn, electronic student diaries facilitate contact between parents and teachers. Modern technologies also have their drawbacks. Computers and the Internet make interpersonal relationships shallow; children spend a lot of time online; they have difficulties in establishing proper relationships. Writing e-mails and text messages makes us less willing to handwrite, children get tired of their hands faster, they have problems with maintaining calligraphic writing and cannot focus.

Information and communication technologies introduced to schools should prepare children for digital adulthood by providing them with modern tools and equipping them with the desired competences of the future (Iwanicka, 2019). This requires a competent teacher who, with their knowledge, experience and commitment, will be able to properly implement new technologies into the teaching process, in accordance with the assumed goals. Teachers who do not feel confident and competent in a digital environment may retreat to the old teaching methods they have proven, which are increasingly different from the changing reality (Łukasiewicz-Wieleba, 2023).

The answer to the second research question (Can modern technologies pave the way for the implementation of the ideal of education, as an action

aimed primarily at shaping an individual capable of effective and creative adaptation to social reality?) is not unambiguous. Modern technologies can cause and in many cases cause that properly used, they not only facilitate learning, but also allow students and young people to develop not in opposition to the digital world of social reality, but compatibly with it. Implementing them to schools, where their task is to facilitate learning and make it even more pleasant for the recipients, meets Znaniecki's claim of acquiring competencies by students during education that allow them to creatively change the social reality in which they will function after graduation (Adamczyk, 2013).

It should be noted as well that education also takes place in cyberspace, especially when it is related to the use of modern technologies, which is why great importance should be attached to cybersecurity. It is particularly important when the cyberspace is used by children and young people who do not have sufficient knowledge about cyber threats or life experience.

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