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Information technology as an important tool in contemporary lifelong learning

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Editorial preface

Bob and Mary Goulding described twelve script topics constituting the basis of early negative decisions. Don't exist, don't be yourself, don't be a child, don't grow up, fail, don't do, don't be important, don't have your own place, don't be close, don't be healthy, don't think and don't feel. Together they create a more or less consciously transmitted episcript, being a kind of a family curse. The child, who will not function better than the parent, gives them a pathological feeling of success resembling a psychological game – in comparison to the child, they do not feel worse. For many people episcript records are the basis of passive behaviour at school and lead to general aversion to school, learning and development. Usually it leads to strengthening a losing or non-winning life approach, attempts of personal development do not bring any positive results and sooner or later they are abandoned. Transferring the idea of vocational training to the area of new technologies might create a situation where a change of the educational context will help to overcome some episcript records and lead to self-development decisions.

Zbigniew Wieczorek

Abstract

The pace of civilization changes taking place in our country causes radical changes in all spheres of life, which is also reflected in the educational reality. Competitiveness of the labour market, globalization processes and the development of new technologies necessitate lifelong education as a key factor determining personal development and life success, as well as the stable development

of society and the knowledge-based economy. Therefore, the concept of lifelong learning is becoming increasingly important. The newest information and communication technologies play a special role in its implementation. The computer network offers enormous possibilities of reaching information, searching for it, storing and processing it. Information technology, available at any time and in any place, is an extremely important tool for the realisation of tasks of modern lifelong education. It enables constant access to knowledge and adapts the pace of learning to individual needs of the student.

Keywords: lifelong learning, permanent education, IT society, information technology, e-education.

Introduction

In the modern society of knowledge focused on continuous development and continuous improvement of the individual, the idea of lifelong education is becoming more and more important. The changeability of contemporary civilization and its increasing complexity require from people to constantly update their knowledge and improve skills and social competences. The intellectual and social capital created in educational practice is becoming one of the most important factors in promoting change. Lifelong expansion of knowledge and improvement of skills and competences is necessary to keep up with the pace of changes, to understand the surrounding world and its phenomena, and finally, to find oneself in the increasingly demanding labour market as well as to deal with the difficult, unstable, constantly changing reality.

> The dynamics of changes in the modern world is already so great that lifelong learning, in formal and informal terms, is no longer a matter of willingness, but a necessity in order not to be excluded from, for example, the labour market. Getting and keeping a job requires more and more qualifications that should be systematically improved (Kuźmińska-Sołśnia, 2008, p. 27)[1].

Today, education is commonly indicated as the central element of the social system and, at the same time, a place for shaping the skills of work and cooperation, as well as for forming the identity of an individual, for creating personal knowledge and cultural competences as an arena of mobilization and learning to act and for many other competences (Kołaczek, 2004, p. 24). That is why lifelong learning becomes an important determinant of both the improvement of an individual and of the quality of the overall functioning of the society. Being open to systematic lifelong education is a great opportunity to enrich the individuality of a person, increase reflectiveness and choice, improve the process of building the quality of life, cooperation and social integration.

According to G.S. Becker (1993) and T.W. Schultz (1976), the investment in human education is much more cost-effective than that allocated to increasing physical capital. Therefore, obtaining education is not only intended "to prepare

[1] All transl. – author.

for work and increase professional efficiency in the dynamically changing labour market, but also to shape awareness, the ability to understand oneself and the world, to develop the sphere of human feelings and the system of values" (Kołaczek, 2004, p. 24).

Thus, educational processes are nowadays considered in the context of the idea of lifelong learning and they assume the need or even the necessity to constantly deepen and supplement knowledge in school and academic institutions (formal education), as well as in the area of non-formal structures (courses, trainings, workshops) and during professional work, and in the process of relations with other people (informal education) (Cęcelek, 2020, p. 41). It should be remembered that

> already after a few years, even the best education obtained as part of formal education requires reconstruction consisting not only in updating the completed field of education, but also in integrating with education assigned so far to other, not always related, areas, and in the case of higher education – to other scientific disciplines (Kwiatkowski, 2018, p. 16).

It should also be noted that the new needs of individual, social and economic life cause that duplicated traditional teaching concepts have little effectiveness in the educational process. They make it difficult to open up to novelty and innovation, and they create serious barriers to awakening intellectual courage, criticism and, at the same time, to the need for lifelong learning. Therefore, changes are necessary in the field of contemporary permanent education aimed at searching for new patterns of lifelong learning which are adapted to contemporary needs. On the one hand, such patterns will move away from transmission of knowledge and on the other hand, they will focus on the development of individual potential of participants in this form of education, on the process of improving their social competences and shaping the ability to use personal predispositions as well as on the effective management of their limitations and development.

Information technology plays an extremely important role in the implementation of the assumptions of permanent education. It provides unlimited possibilities for systematic improvement of modern people's skills and competences, as well as for extending and updating the possessed knowledge. The computer network, when it is used skilfully and rationally, constitutes an irreplaceable source of knowledge.

Lifelong education as an important requirement of contemporary reality

Lifelong learning is a process of continuous, permanent deepening of knowledge, improvement of qualifications and general and professional skills. It is a basic principle of the modern education system, according to which education

lasts throughout a person's life. It encompasses renewing, broadening and deepening a person's general and professional qualifications (Okoń, 2001, p. 196). Lifelong education is a very important requirement of the rapidly changing contemporary reality, shaping a new type of society based on knowledge and information, in which education constitutes the main factor of growth and socio-economic progress (Cęcelek, 2009a, p. 7). Constant economic, cultural and scientific transformations that take place in all areas of social life necessitate adaptation to them. An inevitable consequence of dynamic socio-economic changes is the necessity to constantly acquire knowledge and skills in order to be able to meet the ever-increasing requirements of the external world (Montwiłł, 2006, p. 93).

The effective functioning of an individual in the modern world is determined not only by the individual's ability to adapt to the rapidly changing world, but, above all, by the potential to transform this world, to model the surrounding reality and influence it in a desired way.

> However, it is not only about adapting the school to the changing reality, but also about preparing young people for what will happen – for the future. Students' aspirations as well as the sense of their meaning and quality of life should also be shaped according to the future (Dyrda, 2009, p. 220).

Over time, education acquired in the school system becomes inadequate to the changing labour market, and therefore, should be continued and supplemented.

> Market competitiveness, globalization processes and the development of new technologies necessitate lifelong education as a key factor determining both personal development and life success, as well as the stable development of society and the knowledge-based economy (Kuźmińska-Sołśnia, 2008, p. 25).

The concept of permanent education undermines the old view about the division of human life into the period of preparing for life through school education, the period of work and the period of mature participation in social life.

The traditional division of life into separate periods – the period of childhood and youth, which is intended for school education, the period of professional activity, the period of retirement – does not correspond to the realities of modern life and, even more so, the requirements of the future. Nobody today can expect to accumulate in their youth the basic amount of knowledge that will last a lifetime. The rapid evolution of the world creates the need for constant updating of knowledge, even if there is a tendency to extend the initial period of education of young people (Delors 1998, p. 85). Educational passivity in such realities coincides with failures in many areas of life, which makes the traditional model of teaching completely obsolete.

Contemporary education is responsible for the professional fate and place on the labour market of its participants. Of extreme importance is its impact on the possibility of finding employment and the ability to be economically active,

which can only be realized in a continuous way when the demands of lifelong learning are accounted for.

> Competitiveness in the labour market requires being up-to-date, following news and constantly improving one's skills because the effectiveness of actions depends, among other things, on the speed of reaction and skilful decision-making (Bogaj, Kwiatkowski, 2006, p. 45).

Lifelong education covering the entire life of a person and serving his comprehensive development is aimed at raising a new type of people, characterised by a creative and dynamic attitude to the environment. Such people can perfect themselves and change living conditions improving them for the good of the whole society. Permanent education is also the guiding principle that determines the direction of contemporary educational reforms concerning all levels of education and professional development of working people, parallel education and upbringing in the family and in the environment.

The key role of lifelong education in the modern world is fully reflected in the aspects of education, highlighted in the report of the International Commission on education for the 21st century for UNESCO. These aspects should constitute the pillars of a person's knowledge throughout his or her life. They are enumerated below:

— learning to know, i.e. to get the tools of understanding in order to be able to take advantage of the opportunities offered by lifelong education,
— learning to act in order to gain not only professional qualifications, but also competences that will allow for facing various situations, working in a team and being able to influence one's environment,
— learning to live together, i.e. to participate and cooperate with others on all levels of human activity and to implement joint projects and learn to regulate conflicts with respect for the values of pluralism, mutual understanding and peace while pursuing a fuller understanding and perception of interdependence,
— learning to be – to make it easier to achieve the full development of one's personality and be able to act constantly, increasing the capacity for autonomy, judgment and personal responsibility (Delors 1998, pp. 85–98).

All these pillars are intertwined with common values and form an inseparable whole. They are not only anchored to a specific phase of life or to one place. The educational area, time and content should be thought over, they ought to complement and permeate each other in such a way that each individual, throughout his or her life, could benefit as much as possible from the constantly expanding educational environment, which is caused, inter alia, by the pace of technological development and changes in the labour market as a result of the use of new technologies.

An effective system of lifelong learning should enable every citizen to satisfy his or her aspirations and personal educational needs in optimal conditions, re-

gardless of age, sex, family conditions, degree of disability, place of residence, social and material status, education, nationality. Hence, there is a need to build a more human-friendly system of access to various levels, forms and methods of acquiring knowledge and shaping skills which would have such features as, openness, diversity, permeability, comparability, transparency and recognition of qualifications.

Continuous improvement of competences and their permanent updating is a prerequisite for keeping up with the pace of constantly occurring changes, understanding the surrounding world and coping with constantly changing reality. The idea of lifelong learning is becoming a key issue in the age of knowledge and development of the information society. Permanent education based on the use of information technology is becoming an extremely important factor allowing for overcoming the barriers of conventional education and, at the same time, a factor that brings many opportunities, values and benefits to the contemporary processes of lifelong learning and improvement of contemporary people.

The specificity of using multimedia resources in the process of permanent education

In achieving the objectives of lifelong learning, it is particularly important to use the latest computer and online resources that enhance potential, offering increasingly greater virtual communication opportunities between physically distant environments.

Thanks to the Internet, education has gained a new dimension. On an unprecedented scale, access to vast resources of knowledge, data, information, as well as tools enabling the search and processing of specific data has been made available (Gajda, 2007, p. 142). Information technologies have allowed not only for reaching areas inaccessible to traditional means of learning about reality, but have also made it possible to measure and visualize such data that are beyond human perception. The computer network, the Internet, mobile phones enable immediate interaction with a specific place in the world, which makes it possible to "touch every point" thanks to electronic devices (Izdebska, 2007, p. 526). Attractive virtual reality allows for being in different places in the world, learning and improving various skills, observing and interfering in the world inaccessible to direct perception.

Information technology enriches the ways and possibilities of acquiring knowledge and skills, generates new opportunities for problem-solving and decision-making, and facilitates holistic perception and dealing with uncertainty in action. The development of modern digital technologies generates the creation of new as well as more and more active forms of education, including an appropriate selection and combination of information content. Using them in everyday prac-

tice requires good knowledge and appropriate qualifications (Bednarek, Lubina, 2008, pp. 112–113).

Multimedia education that comprehensively uses a variety of teaching aids begins to occupy an extremely high position in education technology. It is an extremely attractive multicode learning that affects most of the senses and activates learners in many ways (Cęcelek, 2010, p. 31). An increasing number of families have computers at home, more and more people use them at work and in schools. At the same time, the number of Internet users is constantly growing. The Internet has eliminated time and space constraints and made information accessible to millions (Aouil, Kajdasz-Aouil, 2002, p. 63).

Currently, the rapid development of information technology enables full implementation of the idea of universal lifelong learning. Information technology, commonly understood as a set of elements, such as computer networks, computer software, information and communication channels that serve the process of broadly understood, comprehensive use of information, "plays a very important role in lifelong learning thanks to its enormous potential for innovation in ways of learning, as well as in teaching methods, didactic aids and educational environments" (Sysło, 2004, p. 11).

A. Klim-Klimaszewska (2009, pp. 71–72) believes that information technology which covers information, computers, informatics and communication, equips the user with new tools that prove to be extremely useful in educational processes and should be understood as a set of means (i.e. devices such as computers, their external devices and computer networks) and tools (i.e. software, as well as other technologies, e.g. telecommunications), which serve the common use of information.

According to S. Juszczyk (2007a), when analysing information processing technology, its two types should be distinguished:

— informatics technologies covering all technical activities related to the methods of designing architecture, producing technical means of computer science, such as integrated circuits, processors, computers and the methods of constructing system, tool and utility software;
— information technologies (IT), i.e. the entirety of methods and tools for information processing, including methods of searching, selecting, collecting, saving, storing and processing information, as well as sending or deleting it.

When we combine information technologies with elements of (tele) communication, we get integrated information and communication technologies (ICT), which have an extremely significant impact on the functioning of modern humans (Juszczyk, 2007, p. 16).

Exerting a huge impact on all areas of human life and activity, information technologies also determine and significantly enrich the system of interpersonal communication, satisfying important social needs of users.

> Information technology is not only an extremely important education technology, but it is an integral part of every field of activity of individuals and entire societies, and it constitutes a driving force of economic development (Cęcelek, 2009b, p. 339).

In the age of the information society, the Internet constitutes an indispensable tool in the process of searching and exchanging constantly produced information. Therefore, one of the key life competences is the ability to search for, select and manage information, as well as to assess its credibility and quality. Information literacy is a fundamental skill determining membership of the information society.

Information technology plays a very important role in lifelong learning thanks to its enormous potential for innovation in determining learning methods, as well as teaching methods, didactic resources and increasingly more attractive learning environments. Its important advantage is also the provision of technical environments for lifelong learning (e.g. in the form of an information flow channel and access to educational resources) that easily adapt to changes.

S. Juszczyk (2007b) distinguishes the following types of currently used electronic learning:

— classic distance learning with the use of radio, television and the Internet, including both synchronous and asynchronous forms of learning;
— asynchronous learning, containing only asynchronous forms of learning, such as: e-mail, discussion forum, computer simulations, group projects, interactive essay, lectures on CD-ROM or DVD and others;
— computer-assisted synchronous learning and synchronous audio and video conferencing;
— on-line learning using Internet links and resources.

M.M. Sysło (2004, pp. 11–12) enumerates the most important advantages of information technology in relation to lifelong learning:

— flexibility with regard to time and place,
— flexibility with regard to the content and scope of teaching,
— easy access to information and people,
— an important factor in the evolution of education,
— ease of communication and interaction between people,
— supporting learning by doing, i.e. the so-called functional learning,
— new organization of learning,
— fostering integration of personal, professional, private and leisure activities.

The author also draws attention to the fact that, at present, it is not enough to consider the above-mentioned features of information technology as an educational technology. Information Technology has become an integral part of every area of social life and its use in almost every area of activity of individuals and entire societies is equally important. "Practicing" any profession in today's world is associated with professional use of information technology, of course in the scope relevant to the given field.

Large opportunities for the implementation of the idea of lifelong learning by satisfying each person's aspirations and personal educational needs in optimal conditions are created by the development of e-learning "covering education and self-education processes based on Internet technologies" (Przyborowska, 2008, p. 92), creating at the same time significant opportunities in the field of social communication. E-learning is a teaching technology free from restrictions related to the place and time of learning, oriented to individual needs of the learner, creating the possibility of constant access to knowledge, allowing for simple updating of the content provided. In recent years, many new initiatives promoting distance learning and information technologies have been created, "from the basic categories of e-learning (databases, forum, chat, newsletters, e-mail) to the most advanced (e-learning platforms working in synchronous and asynchronous modes)" (Kramek 2005, p. 72).

In the contemporary world, permanent education is a kind of bridge between the history, the present and the future of education. Therefore, the educational process in schools should lead to the development of students' positive attitudes and motivate them to learn at school, and also after graduating. The scientific and technical progress is so fast that it is necessary to be really active to keep up with these changes.

Preparing the young generation for participating in the lifelong learning process and improving their skills is an important challenge of contemporary education. Developing the ability to learn independently and use information is essential in future life and in professional work. Reliable scientific information is extremely important nowadays. The addressees of such information must be thoroughly prepared to receive it. The basic skills in the global information society include information competences shaped by changes taking place in the whole society, especially in informatics and information technology.

The development of Internet technologies allows for the implementation of solutions that complement and deepen the teaching process carried out using traditional methods. Training forms that use both traditional methods and elements of e-learning are referred to as blended learning solutions. This specific synergy of knowledge and technology facilitates the use of complementary features and the richness of the offered possibilities of traditional and modern educational techniques, in particular, such as:

— e-learning that provides the basic, initial portion of theoretical knowledge (the use of modern technologies),
— meeting with the teacher – the proper element of teaching, when the transferred knowledge is being developed through practical exercises, workshops and discussions,
— use of e-learning solutions to consolidate the acquired knowledge (assimilation of material, revisions, sample tests and exercises),

— verification and assessment of the acquired knowledge with the use of e-learning tools (tests, tasks, case study) (Kramek, 2005, p. 68).

The use of a wide range of information and communication technologies serves the use and exchange of dispersed information resources, which are stored on various carriers and constantly increase in size at a very fast pace.

Benefits and limitations generated by information technology in the process of lifelong learning

New information technologies make it possible to transfer proven teaching patterns to e-learning, as well as to introduce new methods and techniques, unknown in classroom teaching. Despite considerable opportunities created by this form of education in the education process, they are not unlimited.

> The limitations of the use of e-learning in lifelong learning lie in the material sphere, that is, in financial possibilities of the teaching-learning relationship participants, in their equipment and software, and most of all in the sphere of their personality (Wołk, 2007, p. 77).

It is extremely important to have access to the necessary IT devices. Additionally, readiness and motivation of both learners and teachers to use the latest information technologies in education play a very significant role. That is why it is worth investing in education, including IT, as it largely prepares citizens to use modern information technology and multimedia in the process of gaining education and in social and professional life (Kuźmińska-Sołśnia, 2006, pp. 40–42).

The most important factors influencing the learning outcomes from the technological point of view comprise the quality of IT and programming tools used on e-learning platforms, the costs of using the platform, the quality of IT solutions offered, completeness of the tools for creating and managing courses, ease of use of the platform (for the creators, instructors and learners alike), possibility of further development, compatibility of the tools with the standards used on the network and other e-learning platforms. The availability of the platform on the network and the continuity of that access are also important criteria to be taken into account (Kramek, 2005, p. 69).

Lifelong learning is characterized by its general social coverage and significant diversification of participants of this form of education. They can be young people who are perfectly prepared to use electronic media, as well as middle-aged and older people. Consequently, there is a need to recognize their opportunities and attitudes towards e-learning. Therefore, "it becomes significant to overcome the barrier of mistrust towards microelectronics and communication with the use of electronic media, as well as the lack of confidence in their use", which allows for using extensive opportunities offered by lifelong education with the use of

computer technologies and for boldly reaching for this form of education in various life and professional situations.

> It is significant that electronic enclaves, which slowly turn into apartments equipped with mobile phones, pagers, hi-fi music equipment and home theatre, calculators, faxes, digital cameras, scanners and computers, not only do not satisfy technological hunger, but paradoxically, they intensify it, arousing increasingly deeper interest in the world of media and virtual reality (Tanaś, 2005, p. 29).

However, it should not be forgotten that apart from many benefits, information technology also carries certain risks, especially in relation to the younger generation, such as computer and Internet addiction, isolation, contact with unwanted information often filled with pornography and cruelty, contact with dangerous people, disclosure of personal data or information, posture and vision defects resulting from spending many hours at the computer and the lack of exercise associated with this lifestyle.

Since the development of modern information technology is irreversibly accelerated in the modern world, it is extremely important to shape in users the ability to use its resources wisely. These skills are indispensable for active participation in the knowledge society.

Summing-up

In conclusion, information technology is a very important tool for modern lifelong learning, which, like every sphere of human activity in society, undergoes transformations related to changes in the conditions in which it is conducted.

> A rapid increase, or even an overflow of various information, doubling of scientific knowledge in a relatively short time, frequent job changes and the need for retraining, what is more, systematic improvement and training for all working people provide the primary task for education which involves mastering methods of fast and effective learning, including the ability to use the available information. It encompasses a wide range of different tasks that all levels and types of education face. It seems particularly urgent to master the newest technology of education and develop skills of selective and critical reception of media (Gajda, 2007, p. 73).

Due to the enormous information overflow, which significantly hinders reaching important, true, current and needed information, the ability to properly select information is significant (Cęcelek, 2005, p. 55).

Therefore, the key task of modern educational systems is to enable permanent access to rich information resources and, at the same time, to prepare the individual and the entire society in the best possible way for optimal functioning in the rapidly changing and increasingly demanding reality.

> Although the wealth, diversity, and ambiguity of mass messages, together with sophisticated manipulation techniques, call into question the problem of human control over mass

media and multimedia – that is, the right choice and fair use of their reception – the process of acquiring the ability to use media in an enriching way is the basic task of education, regardless of the effect achieved (Gajda, 2007, p. 74).

No protection against harmful information will be effective as long as there are people willing to reach for such information (Musioł, 2007, p. 161).

The undeniable advantages of educational multimedia resources, such as continuous access to knowledge and individualization of the education process, allow for predicting that, by bringing new forms of education to lifelong learning, information technology will contribute decisively to the constructive development of the entire society.

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Technologia informacyjna ważnym narzędziem współczesnego kształcenia ustawicznego

Streszczenie

Tempo zmian cywilizacyjnych, jakie dokonują się w naszym kraju, powoduje radykalne zmiany we wszystkich sferach życia, znajdując swoje odzwierciedlenie także w rzeczywistości edukacyjnej. Konkurencyjność rynku pracy, procesy globalizacyjne oraz rozwój nowych technologii wymuszają konieczność edukacji przez całe życie jako kluczowego czynnika decydującego zarówno o osobistym rozwoju i sukcesie życiowym, jak też o stabilnym rozwoju społeczeństwa i gospodarki opartej na wiedzy. W związku z tym coraz większego znaczenia nabiera pojęcie kształcenia ustawicznego, w realizacji założeń którego szczególną rolę odgrywają najnowsze technologie informacyjno-komunikacyjne. Sieć komputerowa daje olbrzymie możliwości docierania do informacji, wyszukiwania jej, gromadzenia i przetwarzania. Technologia informacyjna dostępna w dowolnym czasie i miejscu, umożliwiająca stały dostęp do wiedzy oraz dostosowanie tempa uczenia się do indywidualnych potrzeb ucznia, stanowi niezwykle ważne narzędzie służące realizacji zadań współczesnej edukacji ustawicznej.

Słowa kluczowe: kształcenie ustawiczne, edukacja permanentna, społeczeństwo informacyjne, technologia informacyjna, e-nauczanie.