

The Importance of Multimedia Education in the Informatization of Society

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Summary

The article analyzes the role of multimedia education in the formation of the information society. The information sphere is qualified both as a separate sector of the economy and as a factor in the modernization of education. The essence of the term "information society" is outlined. The phrase "information society" refers to the society in which information becomes a commodity, it is interpreted as a special intangible, equilibrium or the most valuable of material goods. Informatization of society is defined as a global social process, the feature of which is that the dominant activity in the field of social production is the collection, accumulation, production, processing, storage, transmission and use of information. The emergence and development of the information society determine the widespread use of information and communication technologies (ICT) in education, which is motivated by many factors that are disclosed in the article. Various ways of using multimedia technologies in the educational process are described. There are three ways to implement multimedia education, adapted to the level of personal development and intellectual abilities.

Keywords:

multimedia education, information society, information sphere, modernization of education, factors, personality development, information and communication technologies.

1. Introduction

During the last period in Europe there have been radical changes that have covered many important areas of life - economic, social, educational and others. The international community has recognized that the most valuable human asset is knowledge. They play a special role in society as one of the important factors influencing innovation, increasing competitiveness and improving the well-being of citizens. A high level of education is a condition for the success of the state.

In European countries, the focus is on knowledge aimed at developing abilities and competencies. The focus is on education that effectively prepares young people for

participation in society. Training involves three main activities: obtaining new information, its transformation and evaluation. Mastering the selected information needed for further species complements the structure of existing knowledge and is a difficult thing, especially during the information explosion. A person is faced with a choice of various information - in school education, professional work and in private life. Society receives information from many sources: through multimedia, the Internet, local networks, community organizations, government agencies, libraries, etc [4].

2. Analysis of recent research and publications

The role of multimedia education in the formation of the information society is studied by A.I. Kuzminsky, O.V. Kuchay, O.A. Bida believe that the general purpose of continuous training is the training of practitioners, including teachers for professional activities in terms of informatization of society and mass global communication, able to use the whole arsenal of ICT tools to implement the main directions of informatization of education. [16].

The pandemic has led to significant changes in education around the world. At the beginning of the quarantine in the spring of 2020, all educational institutions in the emergency mode switched to distance learning. Therefore, it is now more popular than ever, popular. Distance learning is the most democratic form. I. Kuzminskyi, O.V. Kuchai, O.A. Bida, A.P. Chichuk, I.P. Sigeti, T.P. Kuchai argue that all teachers must be well prepared to manage a wide range of IT devices and to direct the reform of the education sector in accordance with the standards of the European Education Area. This is a long-term process and Ukraine is working in this direction. Authorities are developing distance education rules, making greater use of blended learning approaches, and working to increase the number of educational institutions with Internet

connections and access to digital devices and equipment. Such focused work helps educational institutions not only to overcome the consequences of COVID-19, but also to introduce more sustainable and flexible approaches in future educational activities aimed at maintaining continuity of learning and operational sustainability in higher education, thanks to measures to expand digitalization of the sector [15].

Quantitative analysis by scientists: O.V. Semenikhina, A.O. Yurchenko, A.A. Sbrueva, A.I. Kuzminsky, O.V. Kuchay, O.A. Bida confirms the popularity of open education during the pandemic: there are now a large number of platforms that provide access to open educational resources from various fields of knowledge. Where the teacher, in particular, in a foreign language will be able to use new technologies in education.

The mass share of IT courses in open educational resources in relation to all offered is quite large: on the resource Intuit computer science courses occupy 70% of all courses, on Udemy - 43%, UoPeople - 28%, Edx - 24%.

Most of the courses are offered not only in programming and software development, although the relative weight of these courses is the largest (38.6% of courses considered), but also in areas related to the study of specialized software in a particular field of science (philology, mathematics, physics, biology, finance, etc.), with methods of processing various information content, with cloud computing, etc. This suggests that modern youth has a variety of requests that are satisfied by the author's courses from the world's leading teachers [23].

The article «Information Support of Educationalists as an Important Function of a Postgraduate Education System» based on the theoretical analysis of information access in the system of postgraduate pedagogical education (PPE), and programs of information and library service of teaching staff, it has been rationalized that there is a great necessity for establishing centers of scientific and information support aiming at improving the qualification of teaching staff [17].

Kuchai lights up the positive and negative aspects of the use of multimedia technologies in primary school are characterized [13].

Kuchai, Kuchai, Chychuk in their article «Formation of information culture of future specialists in France and Great Britain» examines the information culture of future professionals in France and the Great Britain. Information culture is a means of social protection of the individual, able to independently accumulate knowledge, change areas of activity, regulate their own behavior based on a comprehensive analysis of the situation. The experience of informatization of educational systems of developed countries shows that one of the conditions for the success of the country is the formation of teachers of both professional information culture and general information culture,

understanding it and use in professional activity, as well as for self-development, self-education [14].

The purpose of the article is to analyze the role of multimedia education in the formation of the information society.

3. Research methods

A peculiar feature of the information sphere of modern society is its fundamentally indiscrete and multidimensional nature. According to a number of fundamental features, it is a holistic phenomenon, but at the level of social practice, the information component is available in all major areas of public life, and its manifestations are diverse. Schematizing to some extent the situation, we can qualify the information sphere as a separate sector of the economy, and as a factor in the modernization of education [9].

To clarify the semantics of the concept of multimedia education in the formation of the information society, it is necessary to outline the essence of the term "information society". The phrase "information society" refers to the society in which information becomes a commodity, it is interpreted as a special intangible, equilibrium or the most valuable of material goods [18]. This term was proposed in 1963 by the Japanese T. Umeshao in an article on the theory of evolution of society based on information technology [8].

Information technology has rapidly entered the human life, increasing the interest of students and teachers who began to appeal to them in the educational process [27]. At the present stage of development of the information society, multimedia technologies have become a common means of education. The basis for the introduction of multimedia technologies in the educational space is such a property of multimedia as the harmonious integration of different types of information [2].

Informatization of society is a global social process, the feature of which is that the dominant activity in the field of social production is the collection, accumulation, production, processing, storage, transmission and use of information.

The emergence and development of the information society determine the widespread use of information and communication technologies (ICT) in education, which is motivated by many factors. First, the introduction of ICT in modern education intensifies the transfer of knowledge and accumulated technological and social experience of mankind not only from generation to generation, but also from one person to another. Secondly, modern ICT, improving the quality of education and training, allow people to more successfully and quickly adapt to environmental conditions, social change, to obtain the necessary knowledge every day. Third, the active and effective introduction of these technologies in education is an important factor in creating a new education system that

meets the requirements of the information society and the process of modernization of the traditional education system [24].

The globalization of the modern information world has led to the establishment of media culture in almost all areas of human life, including the educational space. Modern information technologies play an essential role in shaping the value orientations of young people. Due to the fact that media education is focused on preparing young people for life in new information conditions, to fully perceive a variety of information, mastering communication methods based on modern information technology, the ability to critically interpret information, rapid development of information and communication technologies (ICT) humanity has new opportunities in education, outlining new requirements for learning. The development of the "information space" requires the modern school to modify certain aspects of its activities that no longer meet all the needs of the information society.

The restructuring of the world economic and political order, especially in Europe, requires, among many other changes, the introduction of new content and methods of teaching. The use of ICT helps to change the content of education [28]. Information technology has a powerful impact on the process of student development, serving as a tool of communication and socialization of young people. Information technologies affect the methods of work, cooperation, communication, learning methods [3].

Already in the primary education, teachers must be able to use multimedia technologies in the learning process [26]. One of the most important components of this process is the development of information competencies of teachers, which depend on the use of multimedia technologies in various fields of education; use of multimedia technologies to raise the level and organization of training; transformation of education and curriculum of the school where learning takes place with the help of multimedia technologies [10].

Multimedia technologies have gradually spread to all spheres of human life, including education. Currently, teachers are required to develop multimedia competencies and teach students in this area. Due to technological progress and the important role of multimedia in education, the teacher must be qualified and constantly improve themselves. Multimedia and technical competencies outline a number of aspects that need to be explored. As the world changes rapidly, the teacher must adapt to changes and dynamics of the educational environment, to respond quickly to the demands of modern society, regardless of whether there is multimedia education at school or university. Higher education institutions that do not operate with multimedia technologies cease to attract students, do not keep up with other spheres of public life that try to be relevant to technological progress in the information society.

Information is a society that intensively uses information through various information and communication resources. The development of the information society has a strong influence on the dynamics in education. Scholars argue that the success of the information society depends largely on the education of the individual. In this case, the educational system should more often use new teaching methods based on the latest multimedia technology.

Preparation for life in the information society should be implemented during the teaching of various subjects, and not only in the process of the well-known course "Information Technology", because young people need help to master the latest knowledge in this field. The teacher acts as a guide in today's globalized world, its importance is increasing according to technological progress. The teacher's task is to help students understand how to use information in everyday life, as well as expand their own knowledge. The more interesting the information, the more willingly the student assimilates it.

The school must prepare the student for the proper functioning of the information society, in particular through multimedia technologies in education. Possessing such skills helps to learn about the world in many ways. The student also needs to be taught to process information from different sources. The teacher is called to form a solid foundation for the use of multimedia in today's world [21].

Standards of teacher training for the use of multimedia technologies regulate competencies in the following components:

- multimedia technologies as part of the educational process;
- use of ICT in education;
- application of multimedia technologies as didactic material in the field of education [25].

The use of multimedia technologies in the educational process helps to acquire knowledge and skills in the field of their own training. Knowledge and skills are applied at three stages characteristic of learning:

- planning the way of using multimedia technologies in teaching and students' own work;
- organization of the method of introducing resources and tools into the learning process;
- assessment of the impact of multimedia technologies on improving the effectiveness of teaching and education [25].

According to politicians from developed European countries who play an important role in building an information society by supporting modern technologies, the education system needs many changes from the first stage of education, because educational institutions do not keep pace with changes in ICT. The constant development of ICT has led to various variations in the use of these technologies in the educational process. Most of them can help students learn better and make teaching easier for teachers [6]. The

main indicator of the information society is universal access to various information technologies. The surrounding reality is leading to increasing human dependence on ICT.

After clarifying the nature and features of the information society, it makes sense to analyze multimedia education in the early days of the information society. Younger children are becoming more and more in touch with multimedia, so the need for multimedia education of primary school students today is necessary. This is one of the main requirements of the time, the implementation of which gives a pass to the active participation of the individual in almost all spheres of public life.

In the information society, children need to use multimedia technologies for their own development and the dynamics of the society in which they live. An important task of primary school is to prepare students for life in the information society. It is obvious that the demands of life in the information society, the conscious use of various media motivate the increasing involvement of primary school students in the learning process through multimedia technologies, which are called mostly "media children" [31].

4. Research results

The informatization of society is primarily related to the development of computer technology, various software, global networks (Internet) and multimedia technologies. Multimedia teaching aids play an important role in the development of the information society. According to S. Honcharenko, multimedia teaching aids are a set of hardware and software that allow the user to communicate with a computer, using a variety of natural environments: graphics, hypertext, sound, animation, video. Multimedia systems offer the following information to the user of a personal computer: text; image; animated pictures; audio; video. Technologies that allow using a computer to integrate, process and simultaneously reproduce different types of signals, different environments, tools and methods of information exchange, are nominated for multimedia [7].

There are various ways to use multimedia technologies in the educational process, including:

- use of electronic lecturers, simulators, textbooks, encyclopedias;
- development of situational-role and intellectual games with the use of artificial intelligence;
- modeling of processes and phenomena;
- distance learning;
- conducting interactive educational teleconferences;
- construction of control systems and testing of students' knowledge and skills (application of control tests);
- creation and support of sites of educational institutions;
- preparation of presentations of educational material;

- conducting project and research activities of students, etc [24].

Own Zang-Yuan, Lin Fang-Ni, and Chuang Kun-Hung of Taiwan's Providence University point out that multimedia learning must be the main source of educational technologies [20]. King-Dow Su, Ching-Wen Lin, and Yu-Min Chang of the De Lin Institute of Technology in Taiwan argue that multimedia technology in education is an active, instructive information development, which is a new dominant approach that contacts the learning process [12]. William E. Remus, Kai H. Lim, Marcus J.O'Connor believe that multimedia technologies play a leading role in improving quality teaching [29].

Education with the help of multimedia technologies makes the educational process more interesting, opens new teaching methods, and fills the learning environment with diverse culture. Nowadays, learning based on multimedia technologies helps students gain basic knowledge of the use of information and communication technologies [5].

According to S. Juszczuk, a Polish specialist in media pedagogy, the rapid development of ICT has increased the interest in their use in the learning process among many scholars. Researchers argue that such technologies can be used not only for lightning complex calculations, but also to create a presentation, processing and generating information directly suitable for evaluating results, as well as for the successful completion of the learning process [10].

Thorough conclusions were made by Polish scientists, studying the peculiarities of the use of modern multimedia technologies by teachers in the educational process (Table 1).

Analyzing the data in the tables, it turns out that most teachers (55%) rate their knowledge of the use of modern multimedia technologies as average. Almost the same percentage of respondents described their knowledge as high (23%) and low (22%). Teachers who have worked for no more than 5 years have traditionally stood out in the context of respondents' work experience. None of them showed weak knowledge related to the use of multimedia technologies in education. Their self-esteem is as follows: 82% - average, 18% - high.

Table 1: Teachers' self-assessment of the state of application of modern multimedia technology in the educational process (depending on work experience)

Do I know how to use modern multimedia technologies in the process of learning?										
Category of self-assessment	Work experience in years								Total	
	0-5		6-15		16-25		25 and above		number	%
	Number	%	number	%	number	%	number	%		
High	2	18	8	23	10	27	3	17	23	23
Middle	9	82	21	62	20	54	5	28	55	55
Low	0	0	5	15	7	19	10	55	22	22
Total	11	100	34	100	37	100	18	100	100	100

Source: [27].

Similar results were recorded in the following two groups of teachers, where the largest percentage of respondents rated their level of knowledge of multimedia technologies as average: 62% in the group of teachers working from 6 to 15 years, 54% in the team of teachers with experience from 16 to 25 years. High self-esteem was noted in the junior group of respondents - 23%, in the senior - 27%. In the study groups there were people who use little multimedia technology during the day: in the first complex - 15%, in the second - 19%. It has been found that teachers with the longest work experience show the least awareness of the use of multimedia technologies, because they do not know how to use the Internet, their knowledge of the use of multimedia in teaching is insignificant.

5. Discussion of results

Summarizing the results of the study, we note that almost all primary school teachers are well versed in the use of multimedia technologies in education, have information that the computer and the Internet are necessary tools in work and daily life, interested in implementing unconventional multimedia assistance in their classes, as well as demonstrate a desire to get acquainted with didactic multimedia resources.

A. Szkolak notes that the training of teachers in the use of multimedia technologies in primary education is urgent. The task of a teacher in the modern information society is not only to follow innovations, but also to be one step ahead of his students [27]. Education and updating of teachers' knowledge become the key to the reflexive formation of skills of society's use of the future of multimedia technologies. Computer skills are a telling sign of a high level of teacher training.

Multimedia education has not only a didactic function, but primarily educational and social, because multimedia is designed to interest students, increase the effectiveness of learning in selected educational spaces, as well as influence the formation of a system of qualities and beliefs of students [30].

W. Osmańska-Furmanek and M. Furmanek argue that the main task of multimedia education is to fulfill the role of multimedia in culture, to acquaint users with the possibilities of multimedia and ways to use them in the process of learning and self-education, use of information and communication technologies as a tool of intellectual development [19].

In line with European and global trends concerning the establishment and goals of UNESCO's multimedia education since 1999, it is emphasized that the modern student must be prepared to operate in information and communication and multimedia technologies; conscious (critical) receipt of multimedia information; rational use of multimedia games as learning tools.

For the effective implementation of multimedia education, schools must create the following conditions: proper equipment of libraries and multimedia classrooms; availability of multimedia competencies of teachers; systematic updating and supplementation of multimedia classroom equipment and professional development of teachers in this field. Adherence to these basic conditions is the best preventive resource for teaching children to use multimedia technologies in their own development, to enrich the opportunities for clear self-education, ways to avoid the threats associated with them [1].

Multimedia education can be implemented in three ways, adapted to the level of development of children and their intellectual abilities:

- as multimedia education - multimedia is an object of education that helps the learning process;
- as education through multimedia, where multimedia creates an attractive space for students to improve various activities in school and beyond;
- as an education for multimedia, related to the involvement of students in a multimedia culture, which we understand as a living environment.

In the modern information society, the school is designed to perform a number of tasks within the multimedia learning in primary school:

- guaranteeing children free access to various sources of information;
- preparing them for independent search of the necessary information and materials, in particular from encyclopedias (also multimedia), dictionaries, other online publications;
- development of knowledge, communication directly through multimedia;
- ability to use various information resources;
- preparing children for critical analysis of multimedia programs.

The ability to operate with different sources of information, as well as critically assess their need and application in self-development is the basis, foundation for socially valuable, effective participation in reality, daily life, culture, characterized by unification of thought, manipulation of information and more. Society offers various ready-made patterns of thinking, but the teacher must teach children to independently search and evaluate a variety of values and proposals [30]. Presentation of the preconditions leads to the conclusion that the initial age can serve as a starting point for the development of critical thinking in children [1].

In the XXI century, which is rightly called the era of education, there is an objective need to create a system of innovative education, improvement of information and communication technologies, the priority of which should be the formation of a free and responsible person capable of working in problematic situations. innovative abilities and creative innovative activity on the basis of educational process. To increase the effectiveness of the use of

multimedia technologies in line with the achievement of educational goals, it is necessary to optimize the pedagogical interaction between teacher and student. The use of multimedia technologies in the process of selection, accumulation, systematization and transfer of knowledge, as well as in the organization of various educational activities - one of the important features of the education system currently being formed [22].

Conclusions

Conclusions and prospects for further explorations directly. The modern world is overloaded with information, its selection and evaluation are among the most important human skills. Multimedia technologies are needed all over the world, they dominate through a variety of visual technologies in which you need to select information from the surrounding reality, analyzing it against their experience, knowledge, interpreting from the angle of suitability, use to enrich and develop the educational component.

The student should know that information coming from different sources contains many elements of advertising. It is necessary to moderately assimilate this information, to verify it. Diverse information supply, diversity of multimedia technologies and their processing have appeared before modern society as an urgent task. Thus, the research of scientists confirms that modern society needs better training of primary school teachers, modernization of their work style, the presence of critical thinking in them, raising the professional level of specialists. Achieving the goals of teaching critical thinking and at the same time improving the quality of multimedia learning is an introduction to the education of a person who functions effectively in the information society of the future. Further direct investigations will be aimed at this.

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