Conceptual Approaches to Training Specialists Using Multimedia Technologies

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Summary
Modernization of the educational sector requires globalization, democratization, and the transition to an information technology society. The main goal of education at the present stage is to solve the problem of ensuring the priority of the development of education and science. In modern conditions, the quality of training of qualified specialists is becoming particularly relevant. The great role of teacher education is emphasized by its main goal, which is to train specialists who can ensure the versatile and innovative development of a person as a person and the highest value of society, its mental, physical and aesthetic abilities, high moral qualities, and, consequently, the enrichment on this basis of the intellectual, creative and cultural potential of the people. Among the strategic tasks of modernizing higher education is to ensure informatization of the educational process and access to International Information Systems. The essence of the concept of multimedia is clarified. In the context of media education, multimedia lists a number of functions: informational, interpretive, cultural, entertainment, and educational. The need to meet the needs outlined in the article in the conditions of informatization of the educational process requires the teacher to have knowledge and skills in the field of multimedia pedagogical technologies, knowledge of advanced methods and means of modern science. It is considered what relevant concepts of media education have been developed and are being developed in Ukraine and form an important basis for the modernization of education, which will contribute to the construction of an information society in the country and the formation of civil society. Distance learning is considered – the most democratic form of education that allows broad segments of society to get an education. Distance learning methods are used in higher education institutions, in school education, in the system of advanced training of teachers, in the system of training managerial personnel.

1. Introduction

Today, the issue of restructuring education and improving the system of training specialists is acute in the world. To this end, it is necessary to solve the problem of modernizing the content and improving the effectiveness of training and education of future specialists using multimedia technologies.

In modern Europe and in the world as a whole, there is a deepening understanding of the need for international cooperation in the field of education, the exchange of experience in implementing innovative educational models. The task of reforming and modernizing the education system, adapting it to the requirements of the modern development of civilization is common for countries that create a new socio-economic structure and establish fruitful relations between neighboring countries.

The purpose of our research is to analyze conceptual approaches to training specialists using multimedia technologies.

2. Analysis of recent research and publications

The problem of training specialists by means of multimedia technologies has been studied by many researchers. V. Imber proves that multimedia training for future specialists develops independence and creative thinking in the process of creating their own multimedia projects; optimizes an individual approach to learning [10].

D. Gabel, T. Greenbowe, R. Mitchell, M. Sanger, etc. [9; 24; 29] prove that training should not only provide knowledge, but also teach students its practical application.

J. Ellsworth explores innovative approaches to education, in particular, the introduction of multimedia technologies in education, the spread of information technologies in educational institutions [8].

W. Strykowski outlines the tasks of media education, draws attention to the mass media as a new source of content and educational values, notes that the media form not only what a person sees, but also how he learns it [32].

M. Duda shows the importance of education and training in adapting people to the new global information and digital environment [6]

N. Moiseyuk describes multimedia as a new information technology, focuses on the properties of multimedia [22].

O. Kuchai in his article outlines the conceptual principles of training future teachers with usage of multimedia technologies; examine the practice of multimedia technologies in the training of primary school teachers and the position of multimedia education in the informatization of society [11; 12].

T. Kuchai, O. Biletska, , T. Kravtsova, N. Bidyuk, V. Tretko & O. Kuchai light up the Tradition of the Activity Approach in Teaching Foreign Languages in Higher Education Institutions. Also describe the excellence of higher education in the European educational space. [14; 16].

Kuchai, O., Skyba, K., Demchenko, A., Savchenko, N, Necheporuk, Y., & Rezvan, O. analyze the character of multimedia education in the development of the information society. They underline rise and progress of the information society determine the widespread use of information and communication technologies (ICT) in education, which is motivated by many factors that are related in the article. Also describe many ways of using multimedia technologies in the educational process [15].

3. Research methods

To achieve this goal, the following research methods are used: theoretical (analysis of philosophical, pedagogical, psychological literature), which allows us to substantiate the initial provisions of the study; interpretative and analytical method, on the basis of which sources are studied using synthesis, analysis, systematization and generalization.

4. Results and discussion

Given the similarity of the changes that have taken place in the education of the European Union countries during the reform process and the current situation in the Ukrainian higher education system, the experience of foreign scientists can be valuable for any country in the world.

Current trends in the social development of Ukraine require the transition of higher education to a new concept of training future specialists, improving its quality, which improves the processes of improving the level of professionalism, competence and intellectual culture of a specialist. The key paradigm of modern education is its focus on the individual [1].

According to V. Kremen, the new pedagogical education has a task: to preserve all the positive achievements, experience of Ukrainian education, and enrich it with innovative achievements of European educational environments, to harmonize them with Ukrainian ones [11].

In modern conditions, the quality of training of qualified specialists is becoming particularly relevant. The great role of teacher education is emphasized by its main goal, which is to train specialists who can ensure the versatile and innovative development of a person as a person and the highest value of society, its mental, physical and aesthetic abilities, high moral qualities, and, consequently, the enrichment on this basis of the intellectual, creative and cultural potential of the people.

Among the strategic tasks of modernizing higher education is to ensure informatization of the educational process and access to International Information Systems.

In recent years, multimedia technologies have penetrated the field of education and their application has significantly affected the instructional methodology of information and knowledge of students. Now the intervention of multimedia technologies in the learning process is a real thing. The classroom-based method has been used in domestic educational institutions for decades, but now the mode and concept of teaching students under the influence of multimedia technologies is radically changing. As a result, the use of multimedia technologies in education raises the learning process of students to a qualitatively higher, innovative level [34].

Multimedia technologies are powerful tools for creating and presenting multi-level scientific thought. The advantages of using multimedia technologies in lectures are obvious, since they increase students' interest and ensure their activity during the presentation of the material, which is impossible in a classical format situation when the teacher does not know multimedia technologies [36]. Learning

using multimedia technologies is one of the factors of successful education and gives students confidence in achieving better results.

Clarifying the essence of the concepts of "multimedia", "media education" and describing the reasons for the rapid spread of multimedia, it is worth noting that multimedia in the education system is a new phenomenon, it is often analyzed in the structure of media education, but these two phenomena are quite independent, although they have common features. The concept of multimedia appeared for the first time in the 40s of the XX century in the United States. In the context of media education, multimedia performs a number of functions: informational, interpretive, cultural, entertainment, educational [7].

According to UNESCO documents [20], media education is the training of theory and practical skills in mastering modern mass communication media, a kind of field in pedagogical theory and practice. Media education should be distinguished from Mass Communication Media as auxiliary resources in teaching material from other industries.

At the beginning of the XXI century, scientists interpret multimedia as a kind of "medium" that optimizes the formation of the personality of a modern person, affecting its daily functioning. Most researchers believe that multimedia is a powerful information tool (communication and cultural), while some experts see them as a threat to the psychosomatic health of children. Based on a comprehensive analysis of scientific sources, it can be argued that multimedia is not only information, but also communication resources that affect modern society, as well as help to effectively organize the process of training and upbringing [7].

In recent decades, taking into account the circumstances of the widespread use of information technologies in the educational process of the European Union countries, media pedagogy, a rather new and little-studied sub discipline in the domestic space, has been actively developing. The first meaningful achievements of foreign teachers were the works of A. Lepa "Pedagogy of Mass Media" [19] and B. Siemieniecki "Medial Pedagogy" [30]. These scientific works offer original ideas and contain a scientific justification for the use of media in the education, upbringing and socialization of the individual. Media pedagogy, as a new sub discipline of pedagogy, considers first of all the didactic aspect of media to improve the effectiveness of learning. The educational role of media in shaping the system of values, beliefs and life positions of students is also important.

As I. Sadowska notes, it is necessary to change the process of teacher education due to the great progress of civilization, and, in particular, with the changing path of interpersonal communication. The rapid development of multimedia technologies, which arouses clear interest in the process of research in various fields of science, but, unfortunately, does not keep up with the rapid process of changes in society [28].

The rapid development of information and communication technologies and the mass media system requires purposeful preparation of the individual for their skillful and safe use. Interaction with various media accounts for a significant share in the budget of free time of Ukrainian citizens, which is due to their strong influence on all segments of the population, primarily on children and young people. Media have an effective and contradictory effect on the education of the younger generation, often turning into a leading factor in their socialization, spontaneous social learning. This is happening against the background of permissiveness of the information market, the dominance of low-grade media products, low-moral ideologies and values, which weakens public immunity to socially harmful information influences.

There is an urgent need for the development of media education, one of the main tasks of which is to prevent human vulnerability to media violence and media manipulation, escape from reality into the labyrinths of the virtual world, and spread media dependence. In many countries, media education functions as a system that has become an integral part of general education training for young people on the one hand, and mass information processes on the other. Media education is an attribute of globalization transformations, a factor of economic competitiveness, and it is inextricably linked with the development of democracy in the information society.

Let's look at what relevant concepts of media education have been developed and are being developed in Ukraine and form an important basis for the modernization of education, which will contribute to building an information society in the country and the formation of civil society.

The concept of introducing media education is based on the study of the state of media culture of the population of Ukraine and the international experience of organizing media education. The main provisions of the concept correspond to the tasks formulated in the Paris program-recommendations on UNESCO Media Education (dated June 22, 2007) and the European Parliament resolution on media literacy in the world of digital information (dated December 16, 2008).

The main goal of the concept of introducing media education in Ukraine (dated May 20, 2010) is to promote the development of an effective media education system in the country for comprehensive preparation of children and youth for safe and effective interaction with the modern multimedia system, the formation of media awareness, media literacy and media competence in accordance with age and individual characteristics. The concept is aimed at preparing and conducting a large-scale step-by-step all-Ukrainian experiment on the introduction of media education at all levels; priority beginning of the practice of school media education, which will become the leading

integration link in the formation of an integral system of media education; implementation of media education in higher education, primarily in the process of training specialists of a pedagogical profile; taking into account the tasks of media education during educational reforms and planning budget allocations; initiating broad public support for the media education movement, in particular international cooperation in this area. The National Academy of Pedagogical Sciences of Ukraine assumed the duties of the leading coordinator of media education implementation in the country [3].

The concept of structuring and presenting multimedia and hypermedia environments is of scientific interest. The environment developed by the author allows you to move from a traditional electronic textbook with hypertext pages to an interactive learning environment.

Multimedia not only provides multiple channels for presenting information, but also creates conditions for complementing different environments. Students have great opportunities for creative use of each individual multimedia environment that has its own programming language. Some of these languages are spatially oriented (text, graphics), while others are time-oriented (sound, animation, and video). Systematic use of multimedia has a positive effect on student development. The study of the peculiarities of attention expression in the classroom using multimedia showed not only external activity of students, but also internal, which is based on interest and curiosity [23].

In Ukraine, the concept of the National Informatization program has been developed, which regulates the strategy for the development of the information society in Ukraine, the introduction of the latest ICTs in public life and activities of state authorities and local self-government bodies, the implementation of measures to solve the problem of meeting information needs and information support for socio-economic, environmental, scientific and technical, defense, national-cultural and other activities in areas of national significance. The National Informatization program covers: the main principles of the development of the information society in Ukraine; the strategy for the development of the information society; a set of state programs for informatization; industry programs and projects of informatization; regional programs and projects of informatization of local self-government bodies.

The document is formed on the basis of priorities for the development of the information society in Ukraine and the introduction of the latest ICTs in public life and activities of authorities of various levels in terms of socio-economic, scientific and technical, national and cultural development of the country, taking into account the world experience of development and achievements in the field of informatization; aimed at solving the most important public problems (development of society, citizens, business, education, science, culture, economy, environmental protection and human health, public administration,

national security and defense of the state) and creating conditions for the integration of Ukraine into the world information society, world information space [18].

The concept of the National Informatization program states that informatization of education is aimed at the formation and development of the intellectual potential of the nation, improving the forms and content of the educational process, introducing computer methods of teaching and testing, which makes it possible to solve problems of education at the highest level, taking into account world requirements. Among them are individualization of training, organization of systematic control of knowledge, the ability to take into account the psychophysiological characteristics of each person, and so on.

The results of the informatization of education carried out in Ukraine indicate the development of human information culture (computer education); improvement of education management; staffing of all areas of informatization of the country; specialization and intensification of training of specialists.

Among the priority tasks, the concept focuses on the creation of a global computer network of education and science; the organization of public and private centers for mass training of the population in new specialties, taking into account the requirements of international standards for staffing all areas of informatization through intensive training of specialists and the creation of a learning environment in computerized workplaces; the development of a system of individual continuous training based on automated training courses and systems, intelligent computer and distance learning technologies.

Informatization of scientific activity increases the efficiency of scientific research, contributes to the creation of a powerful system of scientific and technical information. Conditions should be created for broad computerization and mathematization of natural and humanitarian sciences, entry into the world information network of databases and knowledge, and the formation of "United" or "collective" intelligence in the future. Informatization of domestic science will make it possible to increase its practical component, optimize integration into World Science [26].

In Ukraine, the program "information and communication technologies in education and science" has been developed, the purpose of which is to create conditions for the development of education and science, improve the efficiency of Public Administration through the introduction of information and communication technologies, the implementation of the right to free search, receive, transmit, produce and disseminate information, train the necessary specialists and qualified users, promote the development of domestic production of high – tech products and above all-competitive computer programs as the most important component of information and

communication technologies; promote the transition of the economy to an innovative way of development [31].

The state target program for the introduction of information and communication technologies into the educational process of general education institutions "one hundred percent "has been developed and provides for the introduction of information and communication technologies into the educational process of general education institutions, creating conditions for a gradual transition to a new level of education based on these technologies [4].

Therefore, now various aspects of the use of multimedia in education are being actively studied, technical and psychological-pedagogical features of multimedia technologies are being clarified, emphasizing the need for their purposeful and productive application in the educational process of secondary and higher schools. Most teachers and psychologists note that modern information technologies, including multimedia, open up access to non-traditional sources of information, help students implement fundamentally new forms and methods of teaching using conceptual and mathematical modeling of phenomena and processes that increase the effectiveness of the learning process [23].

We believe that in this context, at the present stage of socio-economic, political and educational changes in Ukraine, the problem of media influence on the formation of the value foundations of society is extremely important and requires solving at the legislative level the real practical implementation in the educational space of media education, the development of their methodological foundations, taking into account the national background.

Recently, Ukraine has paid considerable attention to the development of the conceptual provisions of multimedia education. In particular, the concept of "distance learning for schoolchildren" is promising and important.

In modern conditions, there is a need to obtain higher education remotely, which is caused by the need to study on-the-job, receive education for people with disabilities and those who are abroad or in places of deprivation of liberty. This opportunity is provided by distance learning, which is carried out thanks to information and educational technologies and communication systems, especially for effective foreign language education.

Distance learning in the world practice is one of the well-established forms of learning. The pandemic has led to significant changes in the education sector of the entire planet, and it has caused educational problems in Ukraine as well. Each country needs to build its capacity to provide blended learning models [17]

The purpose of the concept of "distance learning of schoolchildren" is to practically test distance learning technologies in the conditions of a real educational process in a general education institution. As a result of the project, it is expected to obtain experimental data necessary to elucidate the quantitative characteristics of system-forming elements of distance learning for schoolchildren.

The strategies of the above concept are: the formation of an educational network, which will include educational institutions, teachers, schoolchildren, teachers of higher educational institutions, parents of students and other subjects; the creation of an internet resource; a wide information campaign to attract and select interested and motivated participants; attracting specialists who have experience in distance learning students; expanding the network of schools that use distance learning; the creation of specialized centers for distance learning of schoolchildren (educational resources, technology, training of schoolchildren); modernization of training and retraining programs for teachers to work in the field of distance learning; improvement of the regulatory framework of the education system (accreditation conditions, remuneration standards, etc.); advertising and informing the population (students, teachers) about the opportunities and benefits of distance learning.

The implementation of the concept is provided by performing the following tasks: forming a network of institutions participating in the project; creating an information website to support the project; providing institutions, project participants with access to the distance learning environment; testing distance learning technology in general education institutions; conducting information and explanatory work with students, parents and teachers to form a positive attitude to distance learning; improving available distance learning tools for use in general education institutions; developing methods and technologies for managing distance learning resources; systematizing and attracting available distance learning resources for project participants to share them; developing educational resources for training teachers and specialists of distance learning adaptation of distance learning methods to the conditions of use in the educational space; development of recommendations on the standards of work of students and teachers in the distance learning environment [2].

The concept of education for the European dimension of Ukraine, which provides for several ways of implementation described below, is also worth research attention.

1. The problem of forming an active life self-determination of a modern young person, his ability to build his own life trajectory, becomes urgent. To implement this task, it is necessary: to form the concept of the European dimension of the quality of education by translating the main ideas and values of European society as a necessary element of European integration; to equip teachers with technology to create conditions for the development of personal value orientations and skills necessary for life in the modern European community; to widely introduce new interactive forms of learning, information and communication technologies.

2. The formation of an active life position of young people in combination with an understanding of a common European identity is one of the most important tasks of education for the European dimension of Ukraine. The implementation of this task is possible through: attracting schools and higher education institutions to participate in the international curricula of the European Union and the Council of Europe to gain accumulated experience in the field of European education; organizing extracurricular work with students to create an atmosphere that promotes the development of citizenship, participation in European values and European citizenship by participating in educational programs ("We are in Europe", "Ukraine is a European state", "European and world heritage", "I am a European citizen"), as well as in the work of school clubs ("Euroclub", UNESCO Club), children's public and youth organizations; development of a series of game simulation projects that would optimize the formation of their own view of young people on the ways of future integration of Ukraine into Europe (for example: "financial and economic integration of Ukraine into the European Community", "modern European policy: foundations and principles of formation", "European law: history and modernity"); development of projects of school self-government activities to involve students in solving real school problems and acquire skills in conducting democratic discussion and actions in the legal space [33] .

The idea of continuing education, advances in artificial intelligence, increased computing capabilities of computers, and the development of mobile technologies have become a powerful incentive for e-learning. Much emphasis was placed on the interaction of ICT and pedagogy. One of the most important issues is the individualization of training, which implies the adaptation of education to the needs of the user. At the same time, the development of creativity becomes important, focusing on studying the effectiveness of the educational process and all its components [27].

In the concept of development of continuing pedagogical education, it is indicated that improving the quality of pedagogical education, its integration into the European space of higher education, strengthening competitiveness in the labor market requires further improvement of the organization of the educational process in higher educational institutions based on humanism, personality-oriented pedagogy, development and self-development of students and provides: improvement of the national system of accumulation and transfer of loans in accordance with the requirements of the European credit transfer system, which is focused on the person who is studying, and is based on transparency of learning results and the educational process; the use of information and communication technologies, interactive teaching methods and Multimedia Tools; individualization of the educational process and strengthening the role of independent work of students; introduction of digital technologies in teaching

tools (electronic textbooks, manuals, catalogs, dictionaries, etc.), computer training programs; technical and technological modernization of educational laboratories and teaching tools; introduction of a flexible, scientifically based system of certification and attestation of professional and pedagogical competence of graduates of pedagogical specialties as a component of state certification.

The socio-pedagogical conditions for the development of continuous pedagogical education include: coordination of the content of fundamental, psychological and pedagogical, methodological, information, communication, practical and socio-humanitarian training of pedagogical and scientific-pedagogical workers with the requirements of the information society and changes occurring in the socio-economic, spiritual and humanitarian sphere, in preschool, general education, extracurricular, vocational educational institutions; modernization of educational activities of higher pedagogical educational institutions that train pedagogical and scientific-pedagogical workers, based on the integration of traditional and the latest training technologies, as well as the creation of a new one generation of textbooks, teaching aids and didactic tools; improvement of the system of selection of young people for pedagogical specialties, expansion of targeted admission and introduction of training of pedagogical personnel on the basis of trilateral agreements; optimization of the network of higher education institutions and institutions of postgraduate pedagogical education in order to create conditions for continuing education of teachers; creation in the structure of higher education institutions, preschool, general education, extracurricular educational institutions-laboratories, centers of practical training of students, training centers and centers of pedagogical innovation; priority provision of pedagogical educational institutions of the latest software, computer and multimedia equipment, printing and laboratory equipment and textbooks [25].

The analysis of scientific sources revealed that conceptual provisions have only just begun to be created by Ukrainian scientists and are partially implemented in the educational process (in the European Union countries, they are used throughout the entire educational process).

As indicated in the" White Book of National Education of Ukraine" [35], Ukrainian education in the context of globalization trends and modern challenges should prepare a person more professionally for life in the information society, the society of knowledge and innovation. The entry of the world into the scientific and informational type of progress determines the need to form a person with innovative thinking and culture, and the ability to innovate. Important is the transition to innovative models of learning, which are characterized by the systematic introduction of complexes of pedagogical methods and techniques aimed at constant involvement of students in active educational and cognitive activities, characterized by intensive multilateral communication of subjects of activity (interaction),

exchange of information, results of students' activities among themselves and the teacher. Such training encourages them to be proactive, creative and active in all types of these activities, provides not for obtaining, but for gaining, creating, and constructing knowledge, skills, and competencies by the student himself, which significantly increases the effectiveness of training [5].

Conclusions

Analysis of the current situation in education in Ukraine shows that the education system is undergoing significant changes in the context of the challenges of the XXI century. As noted by futurologists, the XXI century will be characterized by the development of Information Technologies, computerization, the use of telecommunications, etc. There will also be changes in the rhythm of social and individual progress, which will change people's lives in the direction of increasing individual responsibility and creativity. Changes in education are aimed at the formation of a person capable of self-education, self-improvement, based on new theoretical foundations and fundamental knowledge.

The need to meet the needs outlined in the article in the conditions of informatization of the educational process requires the teacher to have knowledge and skills in the field of multimedia pedagogical technologies, knowledge of advanced methods and means of modern science. It is considered what relevant concepts of media education have been developed and are being developed in Ukraine and form an important basis for the modernization of Education, which will contribute to the construction of an information society in the country and the formation of civil society. Distance learning is considered as a form of education that allows broad segments of society to receive education. Modernization of the educational sector requires globalization, democratization, and the transition to an Information Technology Society. The main goal of education at the present stage is to solve the problem of ensuring the priority of the development of education and science.

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