Use of Multimedia Technologies in the Training of Physical Culture and Sports Specialists

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Summary
Educational reform in Ukraine encourages the use of multimedia technologies in the training of specialists in Physical Education and Sports, which is one of the promising directions of education development. Therefore, the article specifies the content of the terms "innovation" and "technology". For modern society, the introduction of multimedia technologies in education is not so much theoretical as pragmatic, since under condition of globalization it concerns its historical development and prospects associated with the so-called "high technologies".Our goal is to improve the training of Physical Education and Sports specialists by means of multimedia technologies. All of innovative technologies can be divided into four groups, depending on the appropriate form of educational activity for their use. The development of multimedia technologies in the training of specialists in Physical Education and Sport at the present stage of education development should be carried out in accordance with the criteria of manufacturability, which are presented in the article: scientism, to rely on the theoretical provisions of pedagogical science and methods of teaching the discipline, socially recognized educational goals, prospects for modernization of Education; consistency, which provides for the interaction of parts and the whole in the organization of the study environment, as a result of which the physical development of the young generation is an integral entity; guarantee, that is, the error between the planned and obtained results should be minimal; manageability, that is, full management of the stages of work of the teacher and students, which make up the completed cycle of actions; mass participation, for the purpose of applying the technology does not depend on the physical training of students, the pedagogical skill of the teacher and the type of educational institutions. The article presents the theory and method of organizing sports events and circuses in the training of specialists in Physical Education and Sports by means of multimedia technologies. In order to increase the level of physical development of a person, physical fitness and the state of health of students, which has a clear trend to constant deterioration, it is necessary to instill love for sports, carry out high-quality training and organize sports events using multimedia technologies. In the process of sports activities, the participants' mental education is carried out. There are two types of communication here: direct and indirect, which are described in the article.In games and sports competitions, there are many opportunities for forming rules of collective behavior. The main issues of the organization of sports activities by means of multimedia technologies have been clarified. During sports competitions, the tasks presented in Physical Education and sports classes are improved, which ensure the improvement of physical and theoretical training of the individual. The pleasure of sports, bright, emotional spectacles, confirmed by multimedia technologies, arises from the participation of the viewer in them.

Keywords:
training of specialists, Physical Education, Sports, multimedia technologies, innovation, technology, Physical Education and Sports events.

1. Introduction

A feature of the modern socio-economic and socio-cultural situation in the world is the change in qualitative requirements for a specialist of any profile, ensuring his demand in the labor market, successful and qualified professional activity, physical condition, promotion, Social Security and fruitful vital activity in general. The main direction of personality formation is the use of educational opportunities. It develops intelligence and increases the level of competence of a person in any field of activity. Therefore, the issue of restructuring higher education and improving the system of training specialists is acute. To this end, it is necessary to solve the problem of modernizing the

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content and improving the effectiveness of training and education of future specialists using multimedia technologies.

The educational process in higher educational institutions is organized taking into account the scientific and pedagogical potential, the material and educational base of the higher educational institution, and modern information technologies. It focuses on the formation of an educated, harmonious and physically developed personality, capable of constant updating of scientific knowledge, professional mobility and rapid adaptation to dynamic processes in the educational and socio-cultural spheres, fields of engineering and technology, management systems and labor organization in a market economy.

The economic reforms carried out in the world have deeply affected the current problem of a healthy lifestyle, the formation of a health culture, and physical education of young people. The results of research have shown that the level of physical development, physical fitness and health status of young people have a clear tendency to constantly deteriorate. In this regard, young people should master not only general knowledge, but also acquire practical skills and abilities to develop physical and moral strong-willed qualities necessary for health promotion, ensuring a culture of Health, a healthy lifestyle, active social work based on the principles of effective means, methods and forms of educational activities. Considering physical and intellectual work as a social category, it is necessary to take into account that muscle labor activity of a person outwardly always manifests itself in such a physiological process as muscular movement. Many scientists have argued that all the infinite variety of external manifestations of cerebral activity is reduced to just one phenomenon – the muscular movement. No matter what problem a person solves: a theoretical, practical, or muscle production task – in all such cases, a component of motor, writing, or speech muscle activity will be detected on a different scale [28]. Therefore, high-quality training and organization of sports events in education is becoming necessary today.

Our goal is to improve the training of Physical Education and sports specialists by means of multimedia technologies.

We need to train an innovative specialist who will be able to introduce new approaches, new technologies, new thinking, and attitudes to working with children and young people into the educational process. Given the above, we have developed a methodological system for training a creative specialist, which is based on the conditions created by us: a complex of educational and methodological support has been prepared and published, multimedia technologies are used, modern approaches to training are implemented: differentiated, technological, competence-based, personal-activity, etc.

2. Analysis of recent research and publications

In recent years, works have been devoted to the problem of innovative activity of educational institutions. Analysis of the results of research devoted to the problem of using multimedia in the educational process leads to the conclusion that there are no general concepts that would cover ideas in a single system and represent many facts accumulated in the practice of teaching and upbringing [5]. The problem of using multimedia in education was studied by American scientists D. Willows, H. Houghton, studying, in particular, general issues of the organization of training, features of teaching subjects using multimedia and computer modeling tools [29].

Scientists Gabel D., Greenbowe T., Mitchell R., Sanger M, etc. [10; 20].

O. Kuchai, S. Yakovenko, T. Zorochkina, T. Okolnycha, I. Demchenko, & T. Kuchai considers the training of specialists in education in the conditions of distance learning. It is lights up the advantages of distance learning and determined the characteristic features of distance learning of students training in the implementation of these technologies in the educational process [13].

Sanger. M.J. and Greenbowe. T. J. [22] focus on the fact that training is designed not only to form knowledge, but also to teach students to put it into practice. An important component of ensuring a favorable educational environment is the creation of a knowledge base. Teachers should be able to create a diagram that shows the student's level of knowledge, and implement this idea in educational software, so that the student, using the Internet, can receive multimedia information to manage their learning.

O. Kuchai in his article lights up the conceptual principles of training future teachers by means of multimedia technologies and the use of multimedia technologies in the training of primary school teachers [14; 15].

Kuzminskyi, A.I., Kuchai, O.V., & Bida, O.A. have determined the content basis of specialist in computer science vocational training which was grounded on the functional approach in the research process [16].

Biletska, O., Kuchai, T., Kravtsova, T., Bidyuk, N., Tretko, V., & Kuchai, O. in their article characterizes the essence of the activity approach in the aspect of learning foreign languages. An analysis of foreign scholars' recommendations on the implementation of the principle of activity approach to learning was made. The essence of teaching in higher educational institutions, that is to help the teacher to acquire speech competencies for learning foreign languages [2].

M. Duda emphasizes the importance of education and training as the main condition for people's adaptation to the new global information and digital environment [4].

A young person living in the modern world, in the so-called information society, should be distinguished by

openness, speed, and permanent education. In this regard, the question of whether a teacher, having mastered media education, is really able to prepare a young person for life in an information society that is changing so rapidly is being updated [26].

3. Research methods

A set of complementary methods was used to solve research problems: system-historical, logical-historical, chronological and diachronic; functional and structural analysis, which includes various subsystems; systematization and generalization of the processed materials for formulation of conclusions, recommendations and definition of ways of the further development of use of information and communication technologies at education of civil responsibility of students.

4. Results

For modern society, the introduction of multimedia technologies in education is not so much theoretical as pragmatic, since in the context of globalization it concerns its historical development and prospects associated with the so-called "high technologies".

Nowadays, the term "technology" is widely used in the field of education. At the same time, the growing requirements for professional training of a specialist require qualitatively new theoretical and methodological approaches to the training of students, which will allow them in a higher educational institution not only to master the basics of science and professional skills, but also new pedagogical achievements, innovative technologies. Successful mastery of innovative multimedia technologies by students will help them inegrally join teaching activities and immediately start practical application of scientific knowledge in the workplace.

In modern pedagogy, the forms and methods of teaching are divided into traditional and non-traditional. The task of teachers of higher educational institutions is to choose such forms and methods of teaching that would allow each student to show activity and creativity. That is, along with traditional forms and methods of teaching, there are specific ones [21]. These include: informational (conversation, team training, demonstration, consulting, lecture, expertise), operational (algorithm, video confrontation, self-criticism, “do as I do”, laboratory exercises), search (analysis of specific situations, business game, business basket, discussion, forum, maze of actions, brainstorming, audience reaction, creative dialogue, design, etc.), multimedia, self-learning. These forms and methods can be used both for mastering new material and for testing students’ knowledge. The choice of forms and methods depends on the purpose, content and tasks of the educational process aimed at preparing students for pedagogical activities. The essence of multimedia, interactive learning is precisely that the educational process takes place in conditions of constant active interaction of all students. All technologies can be divided into four groups, depending on the appropriate form of educational activity for their use:

1. Pair (work of the subject with the teacher or peers one-on-one).
2. Frontal (the teacher teaches a group of subjects at the same time).
3. Group or cooperative (all subjects teach each other).
4. Individual (individual work of the subject).

Due to the processes of interaction, non-standard, unconventional thinking is formed. This is due to the fact that the educational process is a system of constantly changing pedagogical situations that make it necessary to ensure appropriate flexible, intensive, conceptually rich professional thinking of the teacher when using multimedia technologies. The formation of professional thinking is much more difficult than mastering knowledge, because quite often students are not able to make independent decisions, move away from the studied pattern, express independent judgments in certain pedagogical situations, predict possible results of interaction with the team, an individual using multimedia technologies [12].

J. Dyui was one of the first who develop the concept of educational content with elements of innovation, which was the impetus for the use of innovative technologies in education:

- the reality of the educational material (those things that are of vital importance for the child are studied);
- integrity (combination of mental, physical and emotional-volitional forces of the child in cognitive activity);
- activity-based approach to learning (introduction to project curricula);
- problematic learning as a prerequisite for the development of independent and critical thinking;
- game activity as an important means of educating younger schoolchildren;
- taking into account the interests of the child as a primary factor influencing learning [7].

The reform of education in Ukraine encourages the use of multimedia technologies in physical education and sports, which is one of the promising directions of education development.

Let's clarify the content of the terms "innovation", "technology", "multimedia", "media education". According to the interpretation of I. Dychkivska, innovation (latin innovatio – update, change) – innovation, change, updating; a new approach, the creation of a qualitatively new, the use of the known for other purposes [6]. The word "innovation" consists of two forms: the idea itself and the process of its practical implementation [9]. In the Law of Ukraine "On Innovation Activity" [11], innovations are newly created

and improved technologies, as well as organizational and technical solutions that significantly improve the structure of the educational sphere.

Researchers view innovation in two aspects: as a process and as a product (result). [1].

Scientists believe that technology in any field is an activity that reflects the objective laws of the subject sphere as much as possible and therefore ensures the greatest compliance of the result of activity with the goals set for these conditions. According to G. K. Selevko, the concept of "technology" can be represented by three aspects:

1) scientific: technology is a part of pedagogical science that studies and develops the goals, content and methods of teaching and designing pedagogical processes;

2) process-descriptive: a description of the process algorithm, a set of goals, content, methods and tools for achieving the planned learning outcomes;

3) procedural and effective: implementation of the technological (pedagogical) process, functioning of all personal, instrumental and methodological pedagogical means [24].

Figuring out the essence of the concepts of "multimedia", "media education" and describing the reasons for the rapid spread of multimedia, it is worth noting that it in the education system is a new phenomenon, it is often analyzed in the structure of media education, but these two phenomenon 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: educational, informational, interpretive, cultural, entertainment [8**].**

1. The concept of "multimedia" has a powerful educational potential, despite this, scientific sources do not present a single interpretation of this term. Literally, the lexeme is translated as "many environments" (from the English "multy", “multiple” – multiple, composite, consisting of many parts,"media "– environment, means; from the Latin "multum "– many and "media, medium" – hearth, means, method). According to UNESCO documents [19], media education is the training of theory and practical skills in mastering modern mass media, a kind of field in pedagogical theory and practice. Media education should be distinguished from mass media as auxiliary resources in teaching material from other industries. The initial stage of media education dates back to the 60s – 70s of the 20th century; the second stage – 80 years; the third stage, which is called multimedia (late 90s of the 20th century), is due to the rapid development of computer technologies. The term "multimedia in education" began to be actively used in scientific circles in the late 90s of the last century [25].

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, and also help to effectively organize the process of teaching and upbringing [8]. The range of multimedia implementation in education has significantly expanded: from the use of multimedia technologies in the creation of educational programs to the development of a holistic concept for building educational programs in the field of multimedia, training university-level personnel in a certain direction, the formation of new learning tools.

Multimedia technologies are powerful tools for creating and presenting multi-level scientific thought. The advantages of using multimedia technologies in lectures are obvious, because 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 [18].

Multimedia is used in the context of various learning styles and special needs using one or another form of presentation of educational material, this allows you to make it accessible to a wider number of users, attracting to it those who can perceive information only by ear, who need a high level of visibility, who can not attend an educational institution and receive education independently at home, and so on. Multimedia didactic resources help to meet individual requests and preferences of the user regarding the form of presentation of educational information [3].

The development of innovative technologies in Physical Education and sports at the present stage of education development should be carried out in accordance with the criteria of manufacturability:

- *scientism* relies on the theoretical provisions of pedagogical science and methods of teaching the discipline, socially recognized educational goals, prospects for the modernization of Education;

- *consistency*, which implies the interaction of parts and the whole in the organization of the educational environment, as a result of which the physical development of the younger generation is an integral education;

- *guarantee*, that is, the error between the planned and obtained results should be minimal;

- *manageability*, that is, full management of the stages of work of the teacher and students that make up the completed cycle of such actions:

a) diagnostics of the initial level of knowledge in Physical Education and sports (selection of functions and indicators of initial diagnostics);

b) goal setting, long-term planning (preparation of individual programs for the development or correction of students' knowledge, structuring the content of training);

c) building a work project of educational activities (choosing methods of didactic modeling of students' activities, building a technological chain);

d) procedural implementation of the project (monitoring or targeted feedback);

e) procedural implementation of the project (monitoring or targeted feedback);

f) analysis of diagnostic data (by topic, section; level of knowledge acquisition; level of formation of operational components of thinking; experience of creative activity);

g) assessment of the results of the student's educational activity and self-assessment of the teacher's pedagogical achievements;

- mass participation – the use of technology does not depend on the physical training of students, the pedagogical skill of the teacher and the type of educational institutions [17].

Now multimedia is gradually being introduced into the educational process of all levels of education, which requires timely clarification of the essence of multimedia as a didactic tool, outlining its technical, pedagogical and didactic capabilities, interpreting theoretical issues related to the use of multimedia in the educational process, as well as understanding the results of their practical application, such as sports competitions – a bright, emotional spectacle. Pleasure from sports events arises due to the participation of the viewer in them, who is attracted by the high level of development of motor qualities, bold and decisive actions of participants, and their high achievements.

In sports, almost all types of human activity are represented: cognitive, value-oriented, communication, etc. Therefore, in the process of Physical Education, you can actively form the consciousness and behavior of people in the right direction. In the course of sports events, mental education of participants is carried out. There are two types of communication: direct and indirect. The direct connection lies in the fact that in the course of Physical Education, there is a direct impact on the development of intellectual qualities of those who are engaged. In the process of performing sports exercises, motor cognitive situations constantly arise, the solution of which requires significant mental effort. A simple solution to motor problems: how to make a movement faster, more precisely, what need to do to correct a mistake, etc. – is a chain of mental operations that include observation, generalization, and decision-making. The specificity of mental activity in the process of playing sports lies in the close interaction between body movements and mental operations: those engaged in non-stop checking the program of movements with its actual implementation. As a result, conscious connections are fixed between muscle sensations, motor tasks and the way they are solved. Movements become a way of learning and mastering the world around you.

The indirect connection of sports with the mental development of the individual is that physical exercises create the necessary foundation in the form of good health, which allows a person to fully perform mental activity. Sports are often used as a means to relieve mental tension and stimulate intellectual activity. In the process, there is also a moral development of those children who are engaged in sports. It is aimed at the formation of socially valuable qualities in a person that determine his attitude to other people, to society, to himself and together represent what is commonly called moral education, a physically developed personality. Sports activities unfold against the background of communication, in a team, under the guidance of a mentor, coach. It is communication that is the most powerful factor in the formation of physical development of those who are engaged in sports. From the very beginning of sports, they begin to realize their involvement in the team and, in accordance with the rules and regulations, learn to manage their actions, relate them to the actions of others. So the will is strengthened, discipline is developed, and the habit of sports is formed. Games and sports competitions contain rich opportunities for forming norms of collective behavior. By mastering various team functions, students learn not only to organize their behavior, but also to actively influence the actions of their comrades and perceive the tasks of the team as their own. Under the guidance of the teacher, such important moral qualities as responsibility to the team and a sense of duty are strengthened. Pride in the success of the team, higher education institution, school, etc.

Let's find out the main issues of preparing and organizing sports events at school, focusing on multimedia as a new information technology, that is, a set of techniques, methods, ways of producing, processing, storing, transmitting audiovisual information based on the use of CDs, which allow you to combine text, graphics, audio and video information, animation in one software product. We focus on such important properties of multimedia as interactivity, which helps the user receive feedback and digital encoding of information.

The functions of Physical Education and sports teachers, competition organizers, sports judges and doctors related to the organization and conduct of sports competitions vary depending on the nature of these people's activities. One of the most important functions of Physical Education and sports teachers is to prepare children for participation in sports competitions. Before allowing students to participate in official competitions, it is necessary not only to teach them the skills of sports equipment and tactics, give them certain knowledge, develop the necessary motor qualities, but also to teach them to compete. What is possible in the minds of the present with the help of multimedia. To do this, they need to participate in control and training competitions. The rules in them can be simplified or changed by the teacher himself. For example, the number of attempts or the size of playgrounds, the length of the distance is reduced, the winner is determined by the quality of sports exercises,

etc. The preparation of organizational and methodological events related to sports competitions primarily includes scheduling for competitions in a particular sport. It indicates the name of the competition, the dates and place of their holding, and those responsible for their organization. The calendar of sports competitions for each sport is compiled for boys and girls (if the latter participate in them) and for each age group separately [27].

Sports competitions are an incentive for systematic training and contribute to the growth of sports results, if they are held regularly. The expediency of a child's participation in a certain number of competitions depends on their sports training. Thus, the calendar of sports competitions should be designed so that the planned competitions are diverse in scale, composition of participants and conditions, terms, composition, and venue.

Another important organizational and methodological measure is the preparation of competition regulations. It indicates: the name of the competition, terms, venue, tasks of this competition, the program and procedure for holding by day, the composition of participants, the scoring system (determining the winners), the form of awarding. If the competition is of a team or personal-team nature, the regulation specifies the system for determining the winners in the team competition. In each individual case, it may be different. To participate in the competition, you must submit an application in the preliminary form within the established time frame, and then in the final one. The first application contains the team's desire to participate in competitions. The second application contains information about the composition of participants and some other information, which is easy to do using multimedia. In some sports, re-appearances may be made at the beginning or during competitions with the permission of the chief referee, that is, another participant may be put up instead of one participant, and so on. Based on the submitted applications, competition protocols are drawn up. To conduct competitions, it is necessary to take care of the venue, equipment and inventory in full compliance with the established rules, their high quality and the required quantity.

If the program includes several varieties of the same sport, it is necessary to make a schedule of competitions in advance, that is, determine the sequence and time of each of them. Knowing the average duration of the exercise, the number of attempts and participants, you can determine the total duration of the competition and, based on this, create a schedule and distribute it using multimedia technologies.

The most important document that regulates the conduct of competitions and affects their results are the rules of competitions in a particular sport. They regulate the actions of judges and participants, provide for conditions for identifying winners and, in addition, define the norms of behavior of the athlete, contain a list of prohibited actions that entail punishment that infringes on the interests of the team. [27].

The main organizer and head of sports competitions, responsible for their conduct and, to a certain extent, for the results achieved, is a sports judge appointed from among the Physical Education teachers of one or more schools. The judge is also responsible for the health of the participants of the competition. In all cases where harm to the health of participants may be caused (poor condition of the venue, equipment malfunction, mismatch of clothing and shoes, etc.), he is obliged to eliminate the shortcomings, and if it is impossible to do this – to cancel the competition or postpone it for another period or to another place. A sports judge must first of all be an impeccable expert on the rules of competition in a particular sport, honest, objective, impartial, determined, courteous, calm and enjoy authority and respect outside of competitions [27].

Conclusion

To meet the modern requirements of employers for specialists, a new approach is needed to the personality of a new formation, to a creative, mobile, competitive, morally mature, professionally-cultural, physically prepared professional, ready for active life in the conditions of modern socio-cultural realities that are formed even in the process of training. Therefore, teaching students by means of multimedia technologies is extremely necessary in the present. And multimedia, as a new information technology, that is, a set of techniques, methods, ways of producing, processing, storing, transmitting audiovisual information, helps to achieve the goal.

In order to increase the level of physical development of a person, physical fitness and health status of students, pupils who have a clear tendency to constant deterioration, it is necessary to instill a love of sports, carry out high-quality training and organization of sports events in a higher education institution and school. And physical culture and sports events allow us to solve these issues. During sports competitions, the tasks set in Physical Education and sports classes to improve the physical and theoretical training of the individual are improved. Pleasure from sports, bright, emotional spectacles arises due to the participation of the viewer in them. Sports competitions should be properly and clearly organized. The success of a sporting event depends on its competent construction, and multimedia, which is a branch of computer technology associated with the use of information that has different physical embodiments, helps in this.

It is proved that an important aspect of improving the physical and theoretical training of the individual, combining a triune idea of the child's health (physical, mental, social), prevents overload; is the priority of active teaching methods, the key to awakening positive emotions

and feelings in children, etc. is the organization of sports holidays and spectacles, which will be noted in the future researches.

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