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## Modern trends of physical education and sports in the education system of Ukraine

### Сучасні тенденції фізичного виховання і спорту в системі освіти України

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#### Abstract


The article examines issues of modern trends in physical education and sports in the education system of Ukraine. The role of video materials in the innovative provision of the educational and training process is shown, which became possible for use with the appearance of special programs for processing digital video information, and digital video cameras that allow the output of video information on various media. In the educational process of training future specialists in physical culture and sports, the following options for innovation policy are defined: the policy of "innovative push", "market orientation", "social orientation", and "direction for change". The multifaceted nature of innovative educational innovations is shown. For high-quality professional training of future specialists in physical culture and sports, a methodological basis is described to use innovative types of motor activity. The conducted experimental research makes it


#### Анотація


У статті розглядаються питання про сучасні тенденції у фізичному вихованні і спорті в системі освіти України. Показано роль відеоматеріалів в інноваційному забезпеченні навчально-тренувального процесу, що стали можливі для використання з появою спеціальних програм обробки цифрової відеоінформації, цифрових відеокамер що дозволяють виведення відеоінформації на різні носії. В освітньому процесі підготовки майбутніх фахівців фізичної культури і спорту визначено такі варіанти інноваційної політики – це: політика «інноваційного поштовху», «ринкової орієнтації», «соціальної орієнтації», «спрямування на зміну». Показано багатоаспектність специфіки інноваційних освітніх інновацій. Для якісної професійної підготовки майбутніх фахівців фізичної культури і спорту описано методологічний базис з метою використання інноваційних видів рухової активності. Проведене

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possible to conclude positive qualitative changes in the formation of the readiness of future physical culture and sports specialists to use innovative educational technologies in educational and professional activities, which indicates the effectiveness of the proposed method of applying innovative educational technologies in institutions of higher education to form future specialists of multimedia competence.

**Keywords:** professional training, physical culture and sports specialists, innovative educational technologies, informatization of education, institutions of higher education.

### Introduction

The integration of domestic professional training into the pan-European and global context begins with the awareness of the basics and principles of modern continuous professional training, and the search for ways of its practical implementation. Therefore, it is relevant to determine the current trends in physical education and sports in the education system of Ukraine.

Physical education and sports a priori play an important role in a person's life and cover all age groups of the population. Considering the multifunctional character of physical culture and sports, it determines the development of physical, aesthetic, and moral qualities of the individual, enriches the leisure time of the population, performs a preventive function concerning diseases, promotes physical and psycho-emotional rehabilitation and communication, helps in the education of the younger generation.

Modern students of higher education quickly respond to changes in the digital world, easily perceive technological innovations, and readily find out issues of leisure organization and household issues with the help of advanced software and technical tools. The experience of training future specialists shows that they lack the skills to use technological innovations in non-standard situations and their limited perception of the possibilities of using innovative technologies in providing a system of physical education and sports. Despite the rapid development of technology and science as part of the integral development of today's society, the applied orientation of education in the field of innovative information technologies is not fully implemented, which hinders the further professional development of future specialists in

експериментальне дослідження дає можливість зробити висновок про позитивні якісні зміни у формуванні готовності майбутніх фахівців фізичної культури і спорту до застосування інноваційних освітніх технологій у навчальній та фаховій діяльності, що свідчить про ефективність запропонованої методики застосування інноваційних освітніх технологій у закладах вищої освіти з метою формування у майбутніх фахівців мультимедійної компетентції.

**Ключові слова:** професійна підготовка, фахівці фізичної культури і спорту, інноваційні освітні технології, інформатизація освіти, заклади вищої освіти.

physical culture and sports (Byshevets et al., 2020).

Nowadays, physical culture and sports are considered the main components of society's culture, the mastery of which affects the totality of society's achievements in the rational use and creation of special methods, means, and conditions for the purposeful spiritual and physical improvement of the personality of its physical and motor qualities, on the improvement of people's skills. Competitive, high-quality professional training of physical culture and sports specialists within the framework of the multifaceted specificity of educational innovations is gaining great importance today (Petrenko, 2018).

All these positions require new approaches to the introduction of educational innovations into the educational process of the higher school and the development of forms, content, and methods of professional training of specialists of the new formation. Let's consider the study of the multifaceted specificity of educational innovations in the professional training of future specialists in physical education and sports.

### Literature Review

Modern pedagogical technologies focus the system of higher physical education on the preparation of graduates who possess professional competence and the ability to navigate the labor market, present themselves favorably, and withstand competition with other applicants for jobs. Therefore, one of the tasks of a higher school is to create conditions for training a graduate who can compete in the labor market. It is important for effective professional training

of the future of specialists in physical education and sports to have the quality of higher physical education, which determines the degree of their readiness for various activities, as well as personal, worldview, and civic development. A scientist L. Denysova (2017) analyzed the ways of using information and communication technologies and characterized the modern view and trends of introducing the latest technologies in the professional training of future masters of physical culture and sports. The scientist concluded the need to implement modern information technologies based on cloud computing to solve the issues of providing information resources for higher education and the development of IT infrastructure in educational institutions.

Innovative approaches to high-quality training of future specialists in physical culture and sports were analyzed by O. Sohokon, Ye. Shostak, & O. Donets (2021). They characterized the content of modernization of education, which primarily forms a specialist of high competence and quality, capable in the conditions of continuous integration into the European educational space to innovatively search for ways of self-realization. The importance of a competitive specialist in physical culture and sports is shown, which depends on providing a differentiated approach to children of different ages, strengthening the health potential of young people, and motivating and predicting their needs for self-improvement and physical development. In the modern training of a future specialist in physical culture and sports, the ways of implementing socio-economic, professional, humanitarian, and practical training are revealed.

Many works are devoted to various aspects of physical education and sports in the education system of Ukraine. Thus, the theoretical and methodological principles of the formation of the system of sports for all in Ukraine were reflected in the scientific work of V. Pylnenkyi (2021). He considered innovations that can be used in institutions of higher education and modern technologies in physical culture and sports, which are used in the training of future athletes. It has been proven that innovative education is one of the ways to improve the educational process and an important factor in the entry of the education system of each country into the common European educational space. The necessity of using innovative technologies in the training of future athletes and contributing to the formation of sustainable motivation to maintain physical development, health, and physical training has been proven; the importance of

scientific developments, new technologies in education, and the improvement of sports equipment is shown, penetrating all aspects of education and life, allowing to achieve positive educational and practical results, offering equipment and high-tech equipment.

The basis of the study of the problem of professional training of the future scientific works of specialists in physical education and sports. O. Savonova (2019) singled out the features of the use of mixed learning technologies and named the advantages of implementing the professional training of future specialists in physical education and sports. S. Shynkariov & S. Kostenko (2016) considered the types of innovative technologies; the importance of innovative technologies for quality training of physical culture and sports teachers is revealed; ways of effective use of innovative technologies in the educational process are determined; the integration foundations of the higher education system have been established, which provide for the introduction of innovative technologies in the process of professional training of a teacher of physical culture and sports under the condition of the development and preservation of the traditions and achievements of the higher school.

The researches of modern scientists highlight the problems of improving the professional orientation of the process of physical training of future specialists of various profiles in institutions of higher education. S. Lazorenko (2020) focused attention on the quality training of future specialists in physical culture and sports for the implementation of digital technologies in their professional activities. The scientist emphasized the need for a sufficient modern level of information competence, technological readiness, and digital literacy of physical culture and sports specialists who can find ways to solve professional problems, orient themselves in problematic situations, and be competitive in the labor market.

The methodical and theoretical aspects of the professional training of future specialists in physical culture and sports in institutions of higher education, which is based on holistic, systemic, person-oriented, competence-based, activity-based, reflective, and other approaches, were studied; ideas of synergy; on the provisions of the humanistic paradigm of education; takes into account the development trends of the field of physical culture and sports, the structure of the professional and pedagogical competence of specialist N. Stepanchenko (2017). The author

created and proved the effectiveness of the developed concept of professional training of specialists, and substantiated the conditions for improving the professional training of future specialists in physical education and sports.

In general, the problem of physical education and sports in the education system of Ukraine remains understudied.

At the same time, the peculiarities of training future specialists in institutions of higher education in the field of physical culture and sports are even less studied. Despite the pedagogical orientation of these institutions, the current system of professional training is aimed more at the development of sports skills and the general scientific component of the education of future physical education specialists, which does not provide graduates with the level of pedagogical competence by social demand.

Therefore, despite the importance of scientific research, the problem of professional training of future physical education specialists in higher educational institutions has not been sufficiently studied in the theoretical and methodological aspects, and the traditional education system is not able to ensure the organic entry of a new generation of specialists into the complex and rapidly changing field of diverse needs of educational activity in modern higher education. The defined range of scientific and practical tasks for the development of higher education in Ukraine, together with the current problems of modern science, determined the choice of the topic of our article.

**The purpose of the research:** to find out the main effective modern trends of physical education and sports in the education system of Ukraine and propose ways of their use in the process of professional training of future specialists in physical culture and sports and experimentally verify their effectiveness.

### Methodology

Theoretical research methods were used in order to identify factors influencing the professional training of future physical culture and sports specialists; aimed at obtaining conclusions and objective data for the specifics of the research subject: generalization of results and systematization of research in the field of education to characterize the state of development of the problem of training future specialists in physical culture and sports for the use of innovative types of motor activity in their

professional activities; extrapolation and analysis of research results obtained during the study of pedagogical, sociological, psychological, scientific literature, for substantiation and determination of practical and theoretical principles of training future specialists in physical culture and sports to use the methodological basis of research, innovative types of motor activity in professional activity; to carry out a comparative analysis, with the aim of comparing the theoretical approaches available in the literature to the definition and justification of the qualitative professional training of future physical culture and sports specialists with the use of information technologies in institutions of higher education, and a pedagogical experiment (declarative, formative) – to determine qualitative changes in the formation of readiness future specialists in physical culture and sports to the use of innovative educational technologies in educational and professional activities.

The study of finding out the main effective innovative educational technologies and proposing ways of their use in the process of professional training of future physical culture and sports specialists was carried out based on activity, system, personal, and competence approaches.

A methodological basis was developed for the high-quality professional training of future physical culture and sports specialists to use innovative types of motor activity: at the philosophical level of the methodology; at the general scientific level of the methodology; at the concrete-scientific level of the methodology; at the technological level of methodology.

The implementation of the pedagogical experiment was carried out in three stages: preparatory, main, and final.

At the preparatory stage, the purpose and tasks of the research were determined, the experimental plan was developed, methods of measurement and processing of results were selected, control and experimental groups were selected, and their homogeneity was checked.

At the main stage, an experiment was conducted.

At the final stage, the results of the experiment were analyzed, their reliability was confirmed, and conclusions were drawn about the pedagogical effect of the experiment.

The experiment was conducted at several universities: Volodymyr Vynnychenko Central

Ukrainian State University. Permission to conduct the experiment was approved by the academic councils of these universities and considered by the ethics.

The choice of the methodology for diagnosing the formation of individual indicators of physical education and sports in the education system of Ukraine was determined by their compliance with such principles as validity, reliability, accessibility, informativeness in use, relative ease of processing empirical data, and the possibility of frontal application. By validity, we mean the indicator of suitability of certain research methods, and quality assessment, used under certain conditions in a specific situation. In this way, it is possible to assess how applicable and effective the chosen methods are and how their effectiveness has been verified.

We assume that conducting an experiment with the help of selected methods in the conditions of the traditional system of professional training will allow us to determine the main approaches to the implementation of the conditions for the formation of physical education and sports in the education system of Ukraine.

In the experimental methodology during the experiment, we show the role of video materials in the innovative provision of the educational and training process. In the educational process of training future specialists in physical culture and sports, the following options of innovation policy are used: the policy of "innovation push", "market orientation", "social orientation", and "direction for changes". For high-quality professional training of future specialists in physical culture and sports, methodical bases for the use of innovative types of motor activity have been developed.

The purpose of the experiment was to check the effectiveness of the implementation of the proposed method of applying innovative educational technologies in classes in higher educational institutions for the formation of multimedia competence of future specialists.

The inspection of the quality of assimilation by future specialists of physical culture and sports of educational topics from professional disciplines confirmed the improvement of the results of assimilation of the presented material with the help of innovative educational technologies.

The analysis of the results showed minor changes in the control group, but we can see a significant

increase in the quantitative indicators of the criteria in the experimental group.

In particular, the personal and motivational attitude of future physical culture and sports specialists in educational activities increased by 28.1% in the experimental groups, by 5.6% in the control groups; in the experimental groups, the formation of general information literacy increased by 30%, in the control groups - by 3.1%; the formation of the application of innovative educational technologies and multimedia-creative literacy in the experimental groups increased by 30.6%, in the control groups - by 2.6%.

So, as a result of the experiment, directions for improving the training of future physical culture and sports specialists using innovative educational technologies were determined: purposeful reflection of existing innovative technologies in the training programs of professional disciplines; close connection with the school (experience of innovative teachers, leading specialists in the field of physical culture and sports), use of creative tasks and various pedagogical situations, etc.

To assess the homogeneity of experimental and control data, statistical processing was performed using MS Excel and SPSS (Statistical Package for Social Science).

## Results and Discussion

In the field of physical culture and sports, the following are characteristic features in the field of public services: popularization of innovative non-traditional forms of physical activity (slide aerobics, aqua aerobics, step aerobics, body combat, spin bike aerobics, body pump, fitball gymnastics, zumba, stretching, jumping, bossa, fly -fitness, kango jump, etc.); the emergence of modern forms of motor activity (windsurfing, freestyle, etc.); spread of healing systems (qigong, hatha yoga, taijiquan, etc.) of the ancient East; development of innovative forms of sports, physical culture and rehabilitation, sports, and mass work; revision for the field of physical culture and sports of the content of "traditional" professions (physical education teacher, trainer) and the appearance of new ones (sports manager, instructor-coach, sports, and mass work instructor, commercial type of activity instructor, etc.). The above indicates a demand for specialists in the field of physical culture and sports who teach different, innovative types of motor activity; popularize, master, spread, and demand a solution to the problem of high-quality

professional training based on the use of innovative technologies and a methodological base. Innovative technologies, which are used for the training of future specialists in physical culture and sports in the educational process, strengthen the realization of intellectual opportunities in the information society and increase the quality of the educational process. A large volume of theoretical material is included in the training of specialists in physical culture and sports, but the minimum number of training hours is allocated to it, so the use of modern innovative technologies is necessary for an effective solution to this problem (Petrenko, 2018).

Every day there are more and more discoveries that allow a person to create new innovative techniques, set new records, and master new approaches to training. For example, in athletics, the use of poles made of synthetic materials qualitatively improved their properties and allowed athletes to raise the jump bar from 5 to 6 meters and change the jumping technique altogether. Improvements in the arena of surfaces allowed to change the technique and speed of running, the rhythm of runners, and allowed them to develop great speed. The materials from which bicycles are made have significantly improved, their design and management in cycling have changed, and they have become much faster and lighter than their predecessors. Such innovative technologies affected all types of sports (Bida et al., 2018).

Diagnostic equipment is also constantly being improved, which makes it possible to manage the future athlete's condition during training. The use of systems and devices is simply necessary to analyze information about the athlete during exercise. Today, with the innovative use of video recording devices for multiple reproductions of the image of the athlete's movements, for further adjustment of training, their analysis and technique practice are mandatory. Tensometric devices, which are widely used in the educational and professional space, received an innovative approach and registered the support reaction when performing various exercises. Recently, to conduct research in real-time during training and competition, scientists have developed portable devices; automated systems are actively used to control athlete actions in team sports (Shevchenko et al., 2022).

With the help of diagnostic equipment, data are collected that allow optimization of the activities of physical culture and sports specialists, allowing the use of the best methods and means

of restoring and increasing sports performance, systematic assessment of the level of physical condition of students who attend sections of swimming, athletics, basketball, football, volleyball, handball, triathlon, etc. Innovative development makes the structure of physical education and sports in universities innovative (Zakharova & Petrenko, 2017).

Video materials play an important role in the innovative provision of the educational and training process, which allows for providing innovative information related to dynamic processes (when conducting cultural and mass sports events, teaching students motor actions, analysis of tactical actions, biomechanical characteristics, etc. Such materials can be components of innovative programs and pedagogical tools and can be used independently in the form of a separate thematic video film (Drózd et al., 2022).

With the appearance of special programs for processing digital video information (Adobe Premiere, Windows Movie Maker, etc.), digital video cameras that allow the output of video information to various media, editing, the work of creating innovative materials with the inclusion of video information has become much easier (Ladyka et al., 2019). For example, innovations in sports tourism are the creation of new tourist routes and their meaningful development, the selection of service technologies with the use of new innovative tourist resources, basic products, types of tourism, information technologies, modern achievements of science and technology, the implementation of which allows improving the tourist image of the country, economic development of tourist enterprises. When preparing sports tourist trips, and routes, organizing orienteering competitions, and training future physical culture and sports specialists, it is advisable to use innovative modern technologies, which during the preparatory work allow you to save time, increase the efficiency of planning tours, increase the safety and comfort of sports tourist trips, and make innovative training of future physical culture and sports specialists (Pylnenkyi, 2021).

To analyze the state of implementation of innovative educational technologies and video materials in the innovative provision of the educational and training process, which became possible for use with the appearance of special programs for processing digital video information, digital video cameras that allow the output of video information to various media, the

definition of different options for innovative policy (policy of "innovative impetus", "market orientation", "social orientation", "direction for change") and clarification of the multifaceted specificity of innovative educational innovations, an ascertaining experiment was conducted.

At this stage of the experimental work, the following methods were used: research of students' creative works, questionnaires, interviews, pedagogical observation, student self-assessment, teachers' expert assessment, generalization, and analysis.

In our opinion, the use of innovative educational technologies and video materials in the innovative provision of the educational and training process, which are possible for use with the appearance of special programs for processing digital video information, digital video cameras that allow the output of video information on various media, the definition of various options for innovative policies, the multifaceted specificity of innovative educational innovations contribute to the formation of multimedia competence of students of higher education institutions. We invited the respondents to express their opinions on certain judgments to find out the availability of skills to work in the telecommunications environment of education and the attitude of students to the use of innovative educational technologies in the educational process.

To do this, we developed a questionnaire consisting of questions divided into two blocks. The first block included questions aimed at identifying the state of application of innovative educational technologies in the educational process.

The questionnaire was prepared for both students and teachers. As a result of the analysis of the answers, we concluded that (72%) of the majority of respondents consider it mandatory to use innovative educational technologies in education during the study of projects. This increases the scope of the educational process and provides a practical direction.

In the educational process, increasing the motivation of students in higher education creates conditions for their successful self-realization in the future. At the same time, half of the respondents (57%) are fluent in innovative computer technologies.

To the question: "Do you use innovative information technologies in the educational process?" – 38% of respondents answered "yes".

The next question was: "Do you use multimedia technologies in the educational process?". Here, 59% of respondents gave a positive answer.

The questions of the second block were aimed at studying the state of training of future physical culture and sports specialists to work in an innovative educational environment and their participation in international programs and projects.

29% of respondents can work in an innovative telecommunications educational environment of a higher education institution. Only 9% know international programs.

Regarding the development of methodological materials for participation in projects of innovative educational technologies and their use during the training of future physical culture and sports specialists, 17% gave a positive answer.

Having analyzed all the answers of first-year students, it can be stated that the majority of future specialists in physical education and sports are not ready to use innovative multimedia support.

We have determined the criteria for diagnosing the formed and existing readiness of future physical culture and sports specialists to use innovative means of education in educational activities (personal-motivational, multimedia-creative literacy, general information literacy) and their indicators.

Levels of readiness of future specialists in physical culture and sports to use innovative multimedia educational tools in educational activities have been established based on the analysis of defined criteria: low, medium, and high.

A low level is characteristic of future specialists in physical culture and sports at the level of computer user knowledge, students lack creative imagination, show weak initiative in learning, are unable to analyze and select material in electronic form, work independently with a multimedia product, do not show interest to classes with the use of innovative technologies, do not know how to perceive educational information in electronic form.

The average level is characteristic of future specialists in physical culture and sports, who are aware of the need to use information technologies in professional activities, know how to select and analyze innovative products; they have the basics of working with a computer, they show episodic interest in multimedia learning, they do not show creative approaches when using innovative learning tools.

A high level is typical for future physical culture and sports specialists who have the skills and ability to operate information in electronic form; have a persistent and purposeful attitude to the educational process with the aim of perfect preparation for their professional specialty; show creative approaches to the development of lessons with multimedia elements; have a persistent need for further self-improvement, self-discovery, a rich professional imagination; show a sustained long-term interest in learning with the use of innovative means of education; actively perceive information in electronic form; they are characterized by the use with the appearance of special programs for processing digital video information, digital video cameras that allow the output of video information on various media, the definition of various options for innovation policy (the policy of "innovation push", "market orientation", "social orientation", "direction for change") and elucidation of the multifaceted nature of innovative educational innovations.

We have determined the criteria for determining the formation of multimedia competence of future physical culture and sports specialists to analyze the state of implementation of innovative educational technologies and video materials in the innovative provision of the educational and training process: personal and motivational, multimedia and creative literacy, general information literacy.

The personal and motivational criterion is characterized by the fact that future specialists in physical culture and sports show interest in the use of innovative educational technologies in classes, and have a persistent need for the development of computer literacy, and self-knowledge.

The criterion of multimedia and creative literacy is characterized by the fact that future physical culture and sports specialists show creative approaches to the development of classes with elements of innovative educational technologies; can create their own multimedia presentations when studying educational material and master

the basic knowledge of working with the Microsoft PowerPoint program for future physical culture and sports specialists to create their own educational multimedia products, i.e. acquisition of future physical culture and sports specialists competence in the field of application of innovative educational technologies.

The criterion of general information literacy is characterized by the fact that future specialists in physical culture and sports have the skills and ability to operate information in electronic form and show a long-term stable interest in education with the use of innovative educational technologies.

The confirmatory experiment made it possible to identify the following levels in future physical culture and sports specialists:

- high level of readiness of future physical culture and sports specialists to use innovative educational technologies in educational activities is inherent in a small number of respondents (a high level was found in 10.2% of future physical culture and sports specialists);
- average level of readiness of future physical culture and sports specialists is 34.4%;
- low level of readiness of future physical culture and sports specialists – 55.4%.

The majority of future specialists in physical culture and sports do not have the skills and abilities to operate information in electronic form, do not know how to rationally organize their study time when working with innovative educational technologies, and do not see the need to apply innovative educational technologies in their activities.

Therefore, the study of the levels of knowledge formation of future physical culture and sports specialists showed that today's students are not sufficiently prepared to work with innovative educational technologies, during their training, the main attention is paid to the formation of basic knowledge, they have not developed multimedia competence.

Therefore, we in the experimental groups worked on improving the implementation of innovative educational technologies and video materials in the provision of the educational and training process, which became possible for use with the appearance of special programs for processing digital video information, digital video cameras that allow the output of video information on various media, the definition of various options



innovation policy (the policy of "innovative push", "market orientation", "social orientation", "direction for change") and showing the advantages of the multifaceted specificity of innovative educational innovations and the formation of multimedia competence of students.

In the educational process of training future specialists in physical culture and sports, the following options for innovation policy are defined: the policy of "innovative push", "market orientation", "social orientation", and "direction for change".

The unity of the three components of the innovation process is emphasized in the methodology of innovation: creation, development, and implementation of innovations and is the object of study in pedagogical innovation.

The subject of pedagogical innovation includes a system of relationships that are created in educational innovation activity, which is aimed at the formation of the personality of subjects in the process of training future specialists in physical culture and sports.

Innovations are characterized by quality improvement of the training process of future physical culture and sports specialists, novelty, and results and are reflected in innovative, improved, or new components (content, purpose, methods, forms, means, structure, results), educational technologies (didactic, managerial, educational), scientific developments, innovative technical means, etc.

We will show the multifaceted nature of innovative educational innovations:

- have a mandatory influence on subjects in the process of training future specialists in physical culture and sports;
- are carried out through the interaction of subjects of pedagogical interaction;
- their main driving force is not the motive of introducing profit.
- Innovation must comply with the principles according to the characteristics of innovation processes:
- creation of a new innovative system of training future specialists in physical education and sports; perception of all innovative things by the social and pedagogical community;
- the application of pedagogical innovations (a system of recommendations for practical and theoretical application, knowledge of

innovative educational processes of training future specialists in physical culture and sports and their management) (Voloshyna, 2015).

Analyzing traditional and innovative learning technologies in the conditions of informatization of education in institutions of higher education, we will emphasize the importance and necessity of the existence of forms of distance learning in the world, in particular: Adaptive learning; Blended learning; E-learning (Lishchynska, 2017).

The use of multimedia presentations significantly increases the quality of training of future specialists in physical culture and sports, and makes the educational process more innovative, richer, more dynamic, and more vivid, since the coverage of various directions of theoretical issues can be visually directly demonstrated. Practical assimilation of educational material by future physical culture and sports specialists using a computer workshop provides an opportunity to gain new knowledge using innovative methods, promote health preservation, improve movement programs, and contribute to the creation of safety conditions when performing sports and coaching work, in the process of physical education culture at school, during physical rehabilitation of patients and athletes (Skydan et al., 2017).

When training future specialists in physical culture and sports, information technologies provide opportunities to more efficiently train specialists with the help of information support for application during consideration of theoretical issues, since students can prepare their reports using official websites within the limits of advance tasks (Petrenko, 2018).

The use of blended learning in modern conditions of education modernization in the professional training of future physical culture and sports specialists is a promising and urgent issue within the framework of the organization of the innovative educational process of higher education institutions (Savonova, 2019).

In the process of training future specialists in physical culture and sports in institutions of higher education, cloud technologies, which were initially used in the application of free hosting of postal services, as virtual postal services, became necessary. In connection with the fact that in the scientific literature, there were no theoretical and practical data on the use of cloud technologies, other cloud services were

practically not used for educational purposes, and there were no skills of education seekers regarding the practical use of cloud technologies. And in recent years, students and teachers have begun to value innovative IT applications (Vakaliuk, 2016). The main problems of introducing cloud technologies into the educational process of professional training of future specialists in physical culture and sports include problems with the transfer of specialized software to the "cloud", data security, the need for a high-quality permanent connection to the Internet, the imperfection of the legal framework that defines the duties and the rights of all parties to educational activity (Denysova, 2017).

A methodological basis was developed for the high-quality professional training of future physical culture and sports specialists to use innovative types of motor activity:

- 1) at the philosophical level of the methodology – the dialectical law of unity and the struggle of opposites, existential and dialectical approaches, which determines the need for awareness, identification, and overcoming of internal and external contradictions that are revealed in the course of the educational process (between personal resources and the requirements placed on a person); in the implementation of the professional activity of physical culture and sports specialists (between the market and pedagogical aspects of the activity of physical culture and sports specialists);
- 2) at the general scientific level of the methodology, we will highlight the importance of a systemic approach, which allows us to consider the professional training of future physical culture and sports specialists in a higher education institution as a pedagogical innovative open system, which includes the following interrelated components: principles, systemic factors, purpose, the content of education, subjects, and conditions of the innovative educational process, forms, and methods of the innovative process, means of education, criteria for the effectiveness of the innovative educational process;
- 3) at the concrete-scientific level of the methodology, we distinguish the main innovative, reductionist, professional-personal, activity-based, health-improving, bio-socio-cultural, and gender approaches;
- 4) at the technological level of methodology – teaching methods (Atamaniuk, 2022).

To find out the main effective innovative educational technologies in the process of professional training of future physical culture and sports specialists, we tested their effectiveness experimentally. The meaning of innovation was revealed and innovative technologies were presented as necessary for today's education (Semenikhina et al., 2022).

In the experimental methodology, during the formative experiment, we show the role of video materials in the innovative provision of the educational and training process. In the educational process of training future specialists in physical culture and sports, the following options of innovation policy are applied: the policy of "innovative push", "market orientation", "social orientation", and "direction for change". The multifaceted nature of innovative educational innovations is shown, and the importance and necessity of the existence of forms of innovative education, the use of multimedia presentations, mixed and distance learning, and cloud technologies are proven. For high-quality professional training of future specialists in physical culture and sports, a methodological basis was written to use innovative types of motor activity.

The purpose of the formative experiment was to check the effectiveness of implementing such a proposed method of applying innovative educational technologies in classes in higher education institutions to form multimedia competence in future specialists.

The inspection of the quality of mastering educational topics from professional disciplines by future specialists in physical culture and sports confirmed the improvement of the results of mastering the material taught with the help of innovative educational technologies.

When checking the quality of learning the material and mastering technologies, we used the Student's t-test. At all stages of calculations, it turned out that  $t_{\text{calc.}} > t_{\text{table}}$ , assuming the possibility of the risk of making false conclusions in five cases out of a hundred ( $\alpha \leq 0,05$ ). Therefore, the null hypothesis (H0) that the use of innovative educational technologies in the study of professional topics does not improve the assimilation of educational material, that is, the difference between the old and new methods of the educational process of future physical culture and sports specialists is equal to zero, is rejected, and the alternative hypothesis is accepted (H1), in particular, that the study of educational topics offered to future specialists in physical culture

and sports with the help of innovative educational technologies contributes to the improvement of the results of assimilation of the material, which speaks of the significant advantages of such experimental training.

After the completion of the formative experiment, future specialists in physical culture and sports in educational activities were diagnosed with the level of readiness for the use of innovative educational technologies with the help of defined criteria.

The analysis of the results showed minor changes in the control group, but we can see a significant increase in the quantitative indicators of the criteria in the experimental group.

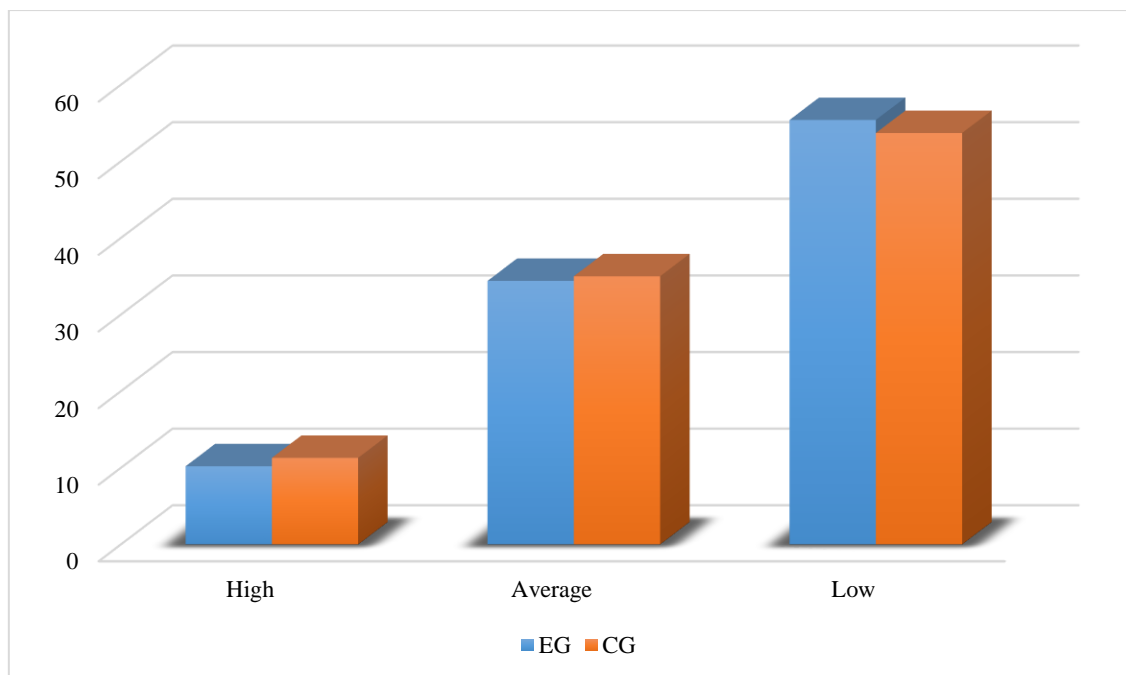
In particular, the personal and motivational attitude of future physical culture and sports specialists to the use of innovative educational technologies in educational activities increased by 28.1% in the experimental groups, and by 5.6% in the control groups; in the experimental groups, the formation of general information literacy increased by 30%, in the control groups – by 3.1%; the formation of the application of innovative educational technologies and multimedia-creative literacy in the experimental groups increased by 30.6%, in the control groups – by 2.6%. The readiness of future physical culture and sports specialists of the experimental and control groups to use innovative educational technologies in educational activities before and after the formative experiment is presented in the table. 1.

**Table 1.**  
*The dynamics of readiness of future physical culture and sports specialists of the experimental and control groups to use innovative educational technologies before and after the experiment.*

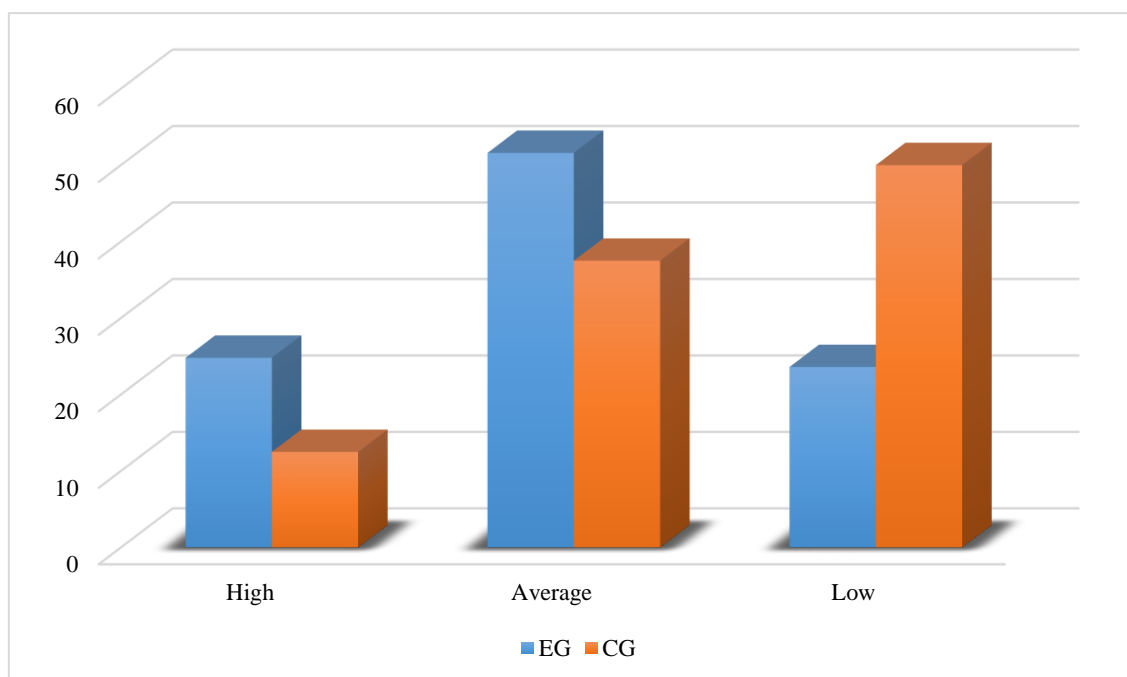
Levels	Experimental group		Control group	
	before (%)	after (%)	before (%)	after (%)
High	10,2	24,8	11,3	12,5
Average	34,4	51,6	35	37,5
Low	55,4	23,6	53,7	50

Therefore, the use of innovative educational technologies in experimental groups during the teaching of professional disciplines contributed to the creation of a positive mood in class, the diversification of forms of educational activity,

and the formation of new skills and abilities, as a result of which the respondents of the experimental groups showed better results in terms of their readiness to use innovative educational technologies (Fig. 1, Fig. 2).



**Figure. 1.** Levels of readiness of EG and CG to use innovative educational technologies in the educational activities of future physical culture and sports specialists before the start of the experiment.



**Figure. 2.** Levels of readiness of EG and CG to use innovative educational technologies in the educational activities of future physical culture and sports specialists after conducting the experiment.

It should be noted that the analysis of the results of the formative experiment allows us to talk about a significant improvement in the results of assimilation by future physical culture and sports specialists of the professional material studied with the help of innovative educational technologies, and this contributed to increasing the level of readiness of future physical culture and sports specialists to use innovative educational technologies in educational activities (the number of future physical culture and sports specialists with a high level of readiness increased by 14.6% and the number of future physical culture and sports specialists with an average level of readiness increased by 17.2%). Future specialists in physical culture and sports receive and improve the ability to create their own multimedia projects, independent work with innovative educational technologies, acquire skills and abilities to operate with information in electronic form, organize their study time while working with an innovative product, the ability to use innovative educational technologies in independent activities, learned to develop classes with elements of innovative educational technologies. This contributed to the formation of the personality of a creative future specialist in physical culture and sports, who has a constant need for further self-improvement, self-discovery, and a rich creative imagination.

The comparison of the obtained results makes it possible to conclude positive qualitative changes in the formation of the readiness of future

physical culture and sports specialists to use innovative educational technologies in educational and professional activities, which indicates the effectiveness of the proposed method of applying innovative educational technologies in classes in institutions of higher education to form multimedia competence in future specialists.

So, as a result, we will determine directions in improving the training of future specialists in physical culture and sports using innovative educational technologies: purposeful reflection of existing innovative technologies in training programs of professional disciplines; close relationship with the school (experience of innovative teachers, leading experts in the field of physical culture and sports), use of creative tasks and various pedagogical situations, etc.

A modern specialist in physical culture and sports should know:

- 1) content of innovative Ossetian technologies;
- 2) forms, principles, and methods of organizing innovative training in the field of physical culture and sports;
- 3) psychological-pedagogical, medical-biological, and sociocultural foundations of innovative educational technologies in the field of physical education and sports.

Thus, it was established that the modern system of higher education provides for the introduction

of innovative educational technologies in the professional training of future specialists in physical education and sports under the condition of the development and preservation of traditions and achievements of higher education. Holistic and essential constant updating of educational theory and practice in the field of physical culture and sports teacher training will be provided by physical culture and health and psychological and pedagogical innovative educational technologies (Shynkariov & Kostenko, 2016).

Therefore, the use of innovative educational technologies in the professional training of future physical culture and sports specialists is constantly being improved in connection with the acceleration of scientific and technical progress, new innovative educational technologies that penetrate all aspects of human life, while opening new horizons for achieving positive educational and professional results, offering high-tech equipment and equipment for educational and professional activities.

The use of innovative educational technologies, which are implemented during the professional training of future physical culture and sports specialists, contributes to the formation of sustainable motivation for physical development, health preservation, physical training, forms practical skills for independent physical exercises, expands movement experience, helps the development of a creative personality, contributes to the improvement and increase of personal results, conducting active recreation, ensures the effective formation of positive motivation for a healthy lifestyle in young people (Pylnenkyi, 2021).

As a result of the analysis of literary sources, we found out the insufficiency of scientific research on the problem of modern trends in physical education and sports in the education system of Ukraine, the insufficiently studied traditional education system, which is unable to ensure the organic entry of a new generation of specialists into the complex and rapidly changing sphere of various educational needs activities of modern higher education. Therefore, we conducted an experimental verification of the effectiveness of the implementation of the method of applying innovative educational technologies in classes at higher educational institutions for the formation of multimedia competence of future specialists.

## Conclusions

In the process of professional training of future specialists in physical culture and sports, the main effective innovative educational technologies were clarified and ways of their use were proposed.

The content of innovation (the process by which a new potential for actions is developed or new assets are created, i.e. it is the process of creating new things with the help of creative thinking and technologically necessary channels) is revealed and innovative technologies are presented as necessary for education today.

The role of video materials in innovative provision of the educational and training process is shown, which became possible for use with the appearance of special programs for processing digital video information (Adobe Premiere, Windows Movie Maker, etc.), digital video cameras that allow the output of video information on various media.

In the educational process of training future specialists in physical culture and sports, the main options for innovative policy are defined.

The multifaceted nature of innovative educational innovations is shown.

Analyzing traditional and innovative learning technologies in conditions of informatization of education in institutions of higher education, they emphasized the importance and necessity of the existence in the world of forms of distance learning, the use of multimedia presentations, mixed learning, and cloud technologies.

For high-quality professional training of future specialists in physical culture and sports, a methodological basis is described to use innovative types of motor activity.

An experimental study was conducted, the results of which allow concluding positive changes in the formation of the readiness of future physical culture and sports specialists to use innovative educational technologies in educational and professional activities, which indicates the effectiveness of the proposed method of applying innovative educational technologies in classes in institutions of higher education to form multimedia competence in future specialists.

Directions in improving the training of future specialists in physical culture and sports using innovative educational technologies have been determined.

We consider further research to be the implementation of the issues of introducing into the educational process of professional training of future physical culture and sports specialists the technologies of contextual learning, the organization of distance learning, etc.

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