

Paralympic Committee (USA). It is rather difficult for Russian potential clients to find such information on domestic official websites. Only a few organizations of the physical culture and sports profile offer the services of a sports psychologist. It should be noted that there is a lower level of demand in Russia for the services of sports psychologists on the issues of psychological support for athletes, compared with the countries mentioned above.

To solve the identified problems, the Association of Sports Psychologists (ASP) has developed a project aimed at creating a system of scientific and methodological support for the professional activities of sports psychologists, educational and educational support, and assistance in creating jobs.

ASP currently unites more than 150 specialists from all over Russia and representatives of the countries of the Commonwealth of Independent States (Armenia, Belarus, Kazakhstan). Together, members of the ASP, with the support of the Association of Higher Educational Institutions of Physical Culture and Sports, developed the professional standard "Sports Psychologist". ASP conducts educational events ("Psychological subbotniks", "Psychological marathons", "Psychological intensives"), together with partner universities - educational (advanced training, internships) and scientific projects (congresses, conferences, symposiums, seminars) for sports psychologists, coaches, athletes and their parents. The roadmap for the implementation of the project "sports psychologist - a profession of the near future" has been drawn up until 2025. As a result of the project, it is expected to increase the prestige of the profession of sports psychologist, create a system of scientific and methodological support for the professional activities of these specialists, which in turn will lead to a decrease in the level of anxiety among athletes, their parents and coaches, involving people of different ages in sports, improving sports results both in mass and professional sports.

At present, in the conditions of political and economic pressure on sports, the work of the ASP to build a system of psychological assistance in the

self-realization of the individual in sports is reaching a new level of development and requires the search for effective evidence-based approaches in this direction. At present, in the conditions of political and economic pressure on sports, the work of the ASP to build a system of psychological assistance in the self-realization of the individual in sports is reaching a new level of development and requires the search for effective evidence-based approaches in this direction.

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Essence and content of informational competence of a future sport coach

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Abstract

Objective of the study was to reveal the essence and content of the information competence of the future sports coach.

Methods and structure of the study. The paper applies a theoretical analysis of scientific papers on the generalization of the classification features of the structure of information competencies of a sports coach.

Results and conclusions. The components of the manifestation of the information competence of a sports coach are shown, which include an understanding of how information and communication technologies (ICT) can support sports and training innovations, as well as the ability to use them and digital tools and equipment to facilitate analytical and sports and training activities in achieving high sports results.

Guided by the recommendations of various standards regarding the main ICT innovations, a system of information competencies of the future sports coach has been developed, among the components of which the essences of electronic educational resources, mobile technologies, "smart" sensors and devices of physical culture and sports orientation, virtual and augmented reality, artificial intelligence and knowledge mining systems (Data Mining) in sports and coaching activities. The scheme of the classification structure of the information competencies of the future sports coach is proposed.

Keywords: *information competence, sports coach, information and communication technologies, classification structure of information competencies.*

Introduction. According to the well-established theory of physical culture and sports education, a high level of an athlete's physical culture involves the integration of its four most important components: physical education, physical development, physical improvement and physical health protection. It is these four components that underlie the work of a sports coach, around which his professional activity is integrated, which means that the search for the most important professional competencies will be based on these elements.

Objective of the study was to reveal the essence and content of the information competence of the future sports coach.

Methods and structure of the study. The paper applies a theoretical analysis of scientific papers on the generalization of the classification features of the structure of information competencies of a sports coach. Let us turn to the state educational standard of higher education 49.04.03 "Sport", on the basis of which the pro-

cess of professional training of future sports coaches is built. In it, the groups of categories of general professional competencies of a sports coach include the following areas: *planning of training preparation; sports selection; training of athletes, their education, upbringing, development; management of competitive activities; doping prevention; control and analysis of the preparedness of athletes; scientific research; regulatory and legal activities; organizational and methodological work.* Through information, the material environment of both the training and competitive processes of an athlete is formed.

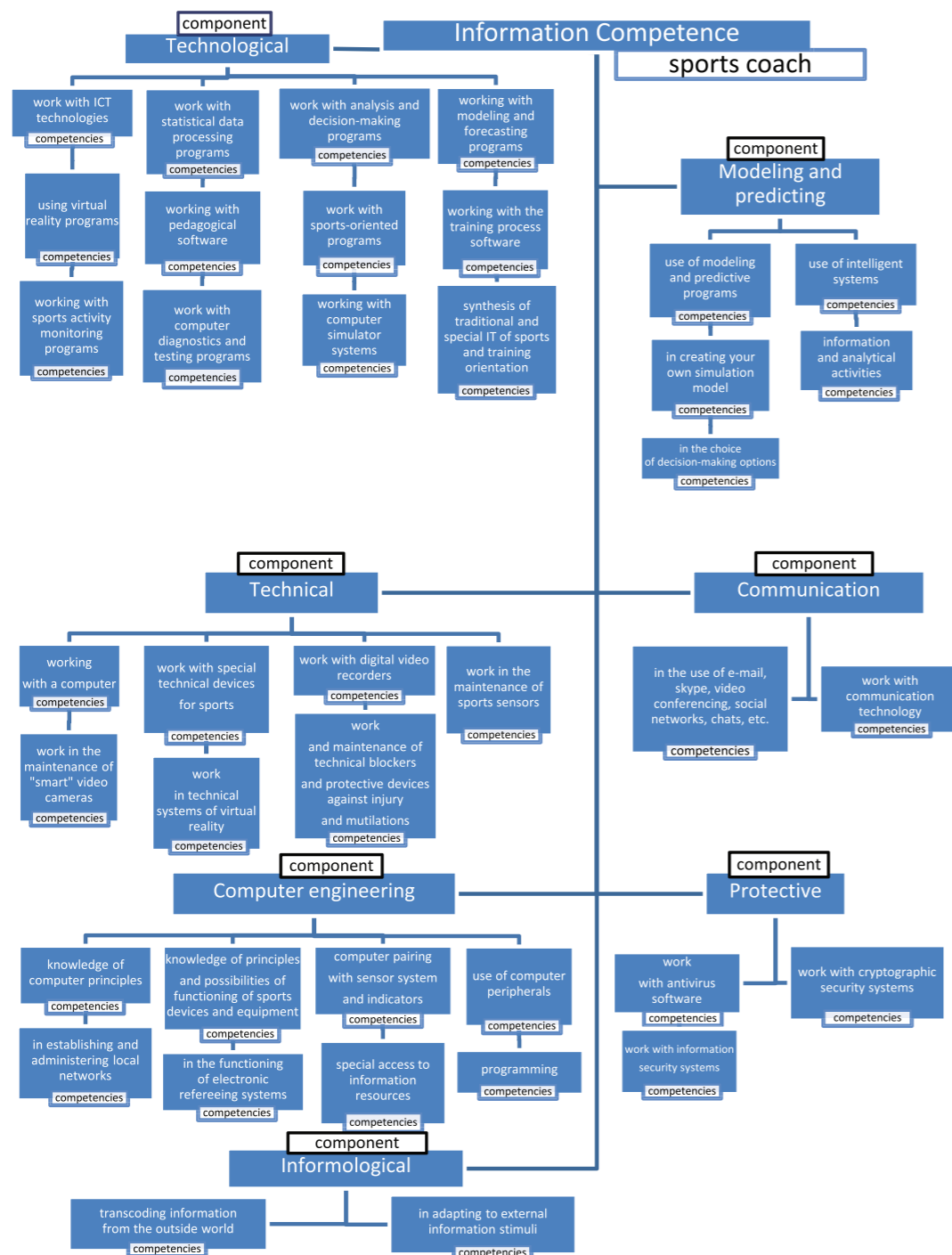
Currently, pedagogical science has not yet developed a holistic definition of the concept of "information competence". Many scientists have studied this concept and considered it in different aspects. So, N.I. Gendina, E.V. Danilchuk, S.D. Karakozov, N.I. Kolkova, I.L. Skipor, N.V. Khodyakova and others present it as a component of the information culture of the individu-



al. A.N. Zavyalov sees it as a user component in solving a certain range of professional tasks by means of new information technologies; O.M. Tolstykh includes it in the composition of compensatory, general cultural competence, which is a component of professional competence, as well as the willingness and ability of an individual to use information and communication technologies (ICT) in professional activities.

Most scientists (V.V. Vorobieva, O.A. Kizik, V.I. Petrova, E.V. Shalashov, etc.) understand *information competence* as a set of knowledge, skills and experience for carrying

out pedagogical activities in the field of using ICT to collect, storage, transmission, processing of professionally significant information, as well as for the implementation of information interaction between students, those who teach and an interactive learning tool. Summarizing the definitions of most researchers, it can be argued that “information competence” acts either as an *integrative quality of a person*, or as an *integral characteristic of an individual*, or as a *complex individual psychological formation* that functions on the basis of the integration of theoretical knowledge, practical skills and experience.



The structure of information competencies of the future sports coach

Results of the study and their discussion. What are the information competencies of a sports coach? The following manifestations can be distinguished:

- in understanding how ICTs can support sports and training innovations; awareness of the limitations and risks of using these technologies; in understanding the ICT development strategy and its functionality; in knowing how special sports software is used; in the validity of the use of computer techniques and the objectivity of the results of the study; in understanding the significance of the data obtained on the basis of computer technology and digital tools; in knowledge of the legal and ethical principles associated with the use of ICTs;

- in the ability to use ICT and digital tools and equipment to support sports, training and analytical activities, as well as to achieve high sports results; in the ability to use special software of a sports-methodical, biological-physiological and psychological-analytical orientation; in the ability to correctly evaluate digital content coming from the database of competitive events, the Internet and other information systems and complexes; in the ability to protect the necessary information and data received through computer and communication devices; in the ability to use artificial intelligence systems and “smart” robotics;

- in working with ICT on the processing of information-sports and information-training content, which provides for a reflective and critical attitude to incoming information, as well as a safe, ethical and responsible approach to the use of this data.

Guided by the “Recommendations of UNESCO” [3, p. 16-18] regarding the main ICT innovations that should be reflected in the content of training, we will try to adapt them taking into account the pedagogical orientation of the future sports coach. Among them are:

- 1) *open (electronic) educational resources*. The future sports coach must be taught how to use numerous electronic educational resources; these include: electronic presentations, electronic textbooks, electronic laboratory workshops, electronic monitoring complex, electronic dictionaries (encyclopedias, reference books), electronic logbook (attendance at classes (trainings), physical activity, competitions, etc.), electronic visual materials (correct performance of training exercises, complex motor elements, controversial sports situations, etc.), electronic guidelines. These materials are placed in the public domain, on special websites, forums, on the cathedral pages of educational organizations, on the Internet pages of sports federations, Internet resources of coaching communities, and other places;

2) *mobile technologies* that allow, using gadgets of various configurations and the presence of a wireless network operating via radio channels, to have almost instant access to educational, information and reference, sports and methodological, special (by sports) and other types of materials at any time, and from anywhere. The power of mobile technology saves time and improves the efficiency and productivity of practice and classroom sessions. Their peculiarity lies in the fact that they provide an opportunity to combine formal and informal approaches to the educational process;

3) “*smart sensors and devices for physical culture and sports*. These include “smart” video cameras, various sensors and indicators that are built into sports items (equipment: balls, sticks; walls of gyms and arenas, shells, devices, etc.), which allow you to capture information about the psychophysiological characteristics of the body of athletes, unobtrusively, without losing their training or rest time. It should be noted that this kind of information can be recorded only with the permission of persons (or their representatives) who are subject to electronic surveillance, taking into account the protection of their personal data;

4) *artificial intelligence*. It can be implemented through specialized programs, or it can be an accompanying element in traditional monitoring, testing, or modeling systems. Most often, artificial intelligence recommendations are used to create individualized content for individual athletes, using adaptive learning systems, diagnostic tracking and monitoring tools, automated scoring systems, etc. Considering that intelligent systems work on precise, purely mathematical approaches, peeped from nature, the effectiveness of the recommendations received from them is very high;

5) *virtual reality*. This is a computer-generated artificial environment in which a person can interact with objects of training or competitive activity (for example, opponents on the court or sparring colleagues in the training process) in such a way that he cannot distinguish whether this environment exists in reality, or takes place only on the screen (in a helmet-mask) of an individual placed in this artificial reality. Virtual reality has a high didactic potential, since it can replace a sports or training situation that is very difficult for an athlete to organize by other means, it provides additional opportunities for teaching hard-to-reproduce nuances of real sports reality and is most often implemented in the form of virtual simulators;

6) *augmented reality*. This is an environment that complements the real physical world with virtual objects (computer models) in real time and can be considered as

a powerful visual tool that gives the coach and his wards not only the opportunity to perform this or that exercise correctly or to demonstrate on the computer screen the consequences of incorrect or dangerous movements (techniques, methods, ways). In fact, augmented reality scrupulously, balancedly shows all the positive and negative aspects of the training process or game situation that cannot be seen or evaluated in any other way;

7) *knowledge mining systems Data Mining*. At present, a huge factual material has been accumulated, both on sports and educational topics in physical culture and sports educational organizations. As a rule, this is diverse and motley information, and it is difficult to get any useful data from it. But now the so-called Data Mining systems have appeared, which in translation means systems of "extraction" (elicitation) or "excavation of data". It is they who can revolutionize the search for new patterns. On the basis of the same intellectualization of big data processing processes, impressive results have already been achieved, which, in principle, cannot be obtained in other ways. Systems of "data mining" find completely new laws of sports functional systems that a person did not suspect before. For example, they reveal ("dig out") absolutely new methods of sports rivalry, find previously unknown methods of training processes, etc. These discoveries are gradually making their way into pedagogical practice. This became possible because intelligent systems process colossal amounts of information, in which, using special algorithms, most often working on the ideas of artificial neural networks, completely unusual innovations in sports are sought out.

For the selection of information competencies, the international ICT standard [2] was taken as the basis, which contains a detailed description of 722 blocks of informatics (related to the discipline "Informatics", included in information) competencies and 61 sets of specialized professional skills. Considering that the level of the Russian physical education and sports bachelor's degree corresponds to the eighth level (Graduate diploma, Graduate certificate, Bachelor honors degree) of the Australian qualifications framework [2] (for the European Higher Education Area, it corresponds to the seventh level - Bachelor degree), then from it we Information competencies suitable for this professional activity were selected.

The closest analogue of the bachelor's program in terms of information competences is the ICT60120 standard - Advanced Diploma of Information Technology [1], which can be considered at the level of an additional specialty or practical specialization in the field of information and communication technologies. Other

training programs offered at the undergraduate or graduate level are even more specialized in ICT.

The study of these international and domestic standards made it possible to clarify the system of informatic competences of a physical culture and sports worker (with a specialization of a trainer-teacher). Based on them, we proposed a classification structure of the information competencies of a sports coach (see figure). It included the following components of information competencies: *technological, communication, technical, modeling and predictive, protective, informational*.

It is this structure of information competencies that meets the modern requirements for a sports coach. It is only necessary to remember that it is possible to realize the best sports results not only with the formation of such competencies, but also with the methodically correct organization of training sessions and creating favorable pedagogical conditions in achieving high sports productivity.

Conclusions. Summarizing the theoretical material, from the point of view of the essence and content of the concept of "*information competence of a sports coach*", we will present its following definition: it is an integrative quality of a person, which is knowledge, skills and abilities in the use of modern information and communication technologies, digital instruments and devices for sports training, competitive and judicial orientation, through the willingness to use them, taking into account professional culture, professional abilities, based on coaching and sports experience, leading to high sports results.

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Development of cognitive and creative abilities of students of the faculty of physical culture under the conditions of teaching complex-coordinated physical exercises

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Abstract

Objective of the study was to reveal the influence of the "operational-circular information model" of teaching physical exercises on the development of creative and cognitive abilities of future physical education teachers.

Methods and structure of the study. The work was carried out on the basis of the Moscow State Regional University in the period from 2018 to 2021. 24 students (boys and girls) of the Faculty of Physical Culture were involved in the study, who studied in the direction of training 44.03.01 "Pedagogical education" (training profile - Physical Culture). The technique was based on an operational-circular information model of training and was worked out by comparing the technique for performing a new exercise being learned with the technique of a reference sample.

Results and conclusions. A structurally organized methodology, which includes blocks of physical, technical and technological training, allows for the period of study from the 2nd to the 4th semester to improve the indicators of students' cognitive abilities from 22 to 41%, and creative - from 19% to 51%. During the period of the experiment, the creative potential of the students of the experimental group improved on average from 47.9±0.98 to 67.4±2.13 (≤ 0.05).

Keywords: *creative abilities, cognitive abilities, complex coordination physical exercises, future teachers of physical culture, operational-circular information model of education.*

Introduction. Currently, most experts believe that improving the quality of education in professional pedagogical institutions becomes possible if modern innovative approaches and technologies are introduced into their educational process [2]. A similar judgment applies to the practice of professional education of future teachers of physical culture [3]. However, here, according to the literature, there is not only the problem of subject-oriented professional training of future teachers, but also the problem of the development of their mental processes associated with the formation of creative and cognitive abilities [7]. The need for the latter is dictated by the active introduction of innovative approaches and technologies, new educational content into general educational organizations of the Russian Federation, requiring from teachers not

only subject-oriented professional knowledge, skills and abilities, but also a sufficiently high cognitive potential and creative thinking [5].

In modern literature, there are data on the positive impact of the process of teaching motor actions on the development of the cognitive abilities of those involved [4]. At the same time, the development process is more efficient if students, thanks to direct and feedback from the teacher (coach), actively participate directly in the learning process itself. At the same time, in recent years, separate judgments have appeared in the specialized literature about the need in the learning process, including teaching physical exercises, to single out the external and internal connection of information transfer.

Under the external direct "informational" connection, it is proposed to understand the connec-