

**EdCW 2020****International Scientific and Practical Conference Education in a Changing World: Global Challenges and National Priorities****DIGITAL ECONOMY COMPETENCIES IN THE PHYSICAL EDUCATION AND SPORTS INDUSTRY**

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**Abstract**

The study was conducted as part of the implementation of supplementary professional education programs aimed at developing the digital economy competencies of specialists in the field of “physical education and sports”. In 2020, educational programs were implemented on various aspects of the digitalization of the physical culture and sports movement: from digital marketing of sports in general, to specific problems of promoting e-sports. The analysis of the primary data obtained during the students’ reflection on the content of professional development programs allowed us to indicate the trends in the social demand of the physical education employees and sports sphere in the period of digital transformation, as well as to determine the current level of formation of digital competencies of specialists in physical culture and sports. The study allows us to discuss the following points: in the field of “physical education and sports” there are no systematic processes for the digital economy competencies formation; the professional standards of the physical culture and sports sphere do not fix labor actions related to the presence of digital economy competencies; educational organizations that train specialists in the physical culture and sports field should develop and implement educational programs and disciplines/modules aimed at the formation of both general professional and professional digital competencies.

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## 1. Introduction

Physical education and sports are an important part of modern life. The social processes of the physical education and sports sphere, as well as all social spheres, are currently undergoing a digital transformation. The Strategy for the development of physical education and sports in the Russian Federation for the period up to 2030 presents a long-term orientation of strategic planning for the development of physical education and sports, taking into account global trends in scientific, technological and digital development. It is digitalization in the field of physical education and mass sports that is the key challenge for the transformation of the “physical education and sports” industry today. At the same time, not only the key processes are changing, but also the content elements (competition formats, channels of communication with sport fans, sports and physical activity with the use of digital technologies are becoming popular, etc.). Thus, the current state of the physical education and sports industry requires digital competencies from the personnel.

## 2. Problem Statement

The problem of forming digital competencies is not sufficiently disclosed in scientific works due to the fact that sports science itself in the late XX and early XXI centuries was focused on the medical and biological aspects of the athlete’s body, primarily in high-performance sports. In mass sports, sports scientists comprehensively consider the functional characteristics of people engaged in recreational forms of physical education and fitness. Scientists note that in Russia and abroad, special attention should be paid to the involvement of the population in physical culture and sports (Abalyan et al., 2018; Dolmatova & Baryaev, 2020). We can argue that the discourse on digital transformation is conducted in terms of the information and communication tools development (Xiao et al., 2017). Individual studies are devoted to a broader understanding of the global issues of digitalization of sports (Kylasov, 2014) and significant changes in the professionograms of the most popular professions in sports through digital technologies (Skarzhinskaya & Sarafanova, 2020). There are also works devoted to the psychophysical adaptation of a person to the challenges of the information society (Ermakov, 2020a). In terms of digitalization, some authors (Dugalić, 2018) consider sports primarily as a media product. Other authors (Ehnold et al., 2020) talk about the digitalization of sports as a tool for managing social phenomena (using the example of volunteerism). Research is being conducted on the basis of the analysis of “big data” recorded by wearable gadgets in the mass organization of motor activity of the population (Ermakov, 2020b).

Research works conducted in the subject field of esports (Novoselov & Petrushin, 2018) focus on the applied nature of esports in the information society. Therefore, when studying esports, it is necessary to take into account its specifics as a communication channel (Boguslavskaya et al., 2018) and as a special gaming environment (Sergeev & Kaklauskas, 2018). Scientific developments are underway to create digital equipment that provides the training process of e-sports athletes (Slodenikin, 2019), as well as the use of touch controllers in e-sports competitions based on physical activity (Strelnikova & Novoselov, 2018). Despite the large number of scientific papers devoted to e-sports, no systematic analysis of the digital competencies formation has been revealed.

In general, despite the fact that attempts have been made to create up-to-date educational programs for training coaches in sports (Gatsunaev & Novoselov, 2014), at present, mechanisms for the formation of digital economy competencies in the field of “physical education and sports” have not been created.

### **3. Research Questions**

The study addressed the following issues:

- 3.1. What is the level of modern digital competencies of the physical education and sports sphere employees?
- 3.2. What legal and regulatory documents promote/inhibit the development of competencies of the digital economy workforce “physical education and sport”?
- 3.3. What advanced education programs in sports should be implemented in order to effectively form the digital competence?

### **4. Purpose of the Study**

The purpose of the study is to identify the social demand and indicate the ways of its implementation for the formation of digital competencies of physical education and sports workers.

### **5. Research Methods**

From September 25 to 30, 2020, Russian State University of Physical Education, Sport, Youth and Tourism (SCOLIPE) implemented a short-term supplementary professional education program educational program “Digital Transformation of Physical Education and Sports” for students working in sports institutions of the Moscow region. The program was implemented online on the Moodle platform. The method of included pedagogical observation, survey, interview, and testing was used.

In the period from November 5 to 25, 2020, within the framework of the Personal Digital Certificate project, with the information support of the Russian Ministry of Sports, three additional professional education programs were implemented: “Digital Marketing in Sports”, “Event Producer (e-sports)”, “SMM in e-sports”. These programs were mastered by students from 48 regions of the Russian Federation. Both theorists and successful practitioners were involved in the implementation of educational programs. The training was conducted in an online format. Students in their personal account left digital traces for all types of work performed. The following methods of scientific research were used: the method of project modeling, survey, interview, testing, and analysis of the digital footprint (reflections of each lesson).

Also in 2020, a content analysis of the main regulatory documents of the “physical education and sports” industry and educational programs of subordinate universities was conducted.

## 6. Findings

The conducted research has demonstrated that the level of digital competencies among employees of the physical education and sports sphere is not high enough to perform the actual tasks of sports institutions functioning in the context of digital transformation.

Self-diagnosis revealed that only 17% of respondents (n – 517) consider themselves confident users of digital technologies in sports, and 28% indicated that they have problems using information and communication technologies. 64% of all the participants in advanced training courses surveyed by us had no idea about the requirements for the digital economy competencies. Almost all the experts who participated in the interviews (n – 92) claim that departmental educational organizations do not have educational programs (disciplines/modules) aimed at the formation of digital competencies. The vast majority of respondents independently mastered the work skills required when working in the digital space.

54 heads of sports institutions participating in the study noted that they have difficulties with the employment of specialists who provide information about the current activities of the institution on various digital platforms, due to the lack of such a staff unit and the professional standard of this employee in the field of physical education and sports.

The most active development, compared to the digitalization of coaching, is the digital marketing of sports organizations. In the b2b segment, the priority is the use of tools: affiliate programs, websites, social networks; in the b2g segment – advertising through professional sports communities and information platforms of government agencies, the use of websites, advertising on radio and television; and in the b2c segment – the use of social networks, websites, promotion in blogs and thematic communities. The study participants also claim that sports institutions strive to switch to electronic document management and automation of key processes as much as possible, using modern CRM systems. However, it is difficult to find trained specialists who effectively perform these types of work.

In e-sports, as the most digitalized sport, there is also a lack of trained personnel. Although the very specifics of the training and competitive activities of e-sports players, allow us to assert that e-sports is a universal tool for the formation of digital economy competencies.

Monitoring of regulatory documents has shown that professional standards most of all hinder the development of the digital economy competencies of personnel in the field of “physical education and sports”. Their content does not fully disclose the labor actions of employees using digital technologies. Content analysis of the curricula of departmental universities of physical culture and sports showed that they do not represent the disciplines that form the general and professional competencies of the digital economy.

The study showed that different professional digital competencies should be formed for different categories of employees of the physical education and sports sphere (Table 01).

**Table 1.** Physical education and sports” industry employees’ professional digital competencies formation at different levels/types of education

№	Level/type of education	Professional digital competencies	Professional track
1	bachelor’s degree	An employee knows the leading electronic communication channels of the physical culture and sports community An employee has the skills to operate various digital equipment An employee knows how to use the application software package	Sports SMM Event management Coach (including online) Sports referee (including online)
2	master’s degree	An employee knows scientific approaches to the development of digital technologies in sports An employee has the skills of drawing up technical specifications for the development of hardware and software systems and programs for the physical culture and sports sphere An employee is able, within the framework of team interaction, to create an intelligent product based on digital technologies	Sports Marketing Specialist Coach-analyst Researcher (scientific and methodological support of high-performance sports) University Teacher
3	postgraduate degree	An employee knows the scientific developments of digital technologies in sports that precede the technological breakthrough An employee is able, on the basis of the terms of reference, to develop scientific support for a digital project An employee is able to create innovative projects and products based on digital technologies within the framework of international scientific and technical cooperation	Strategic management System analyst in sports Research worker
4	supplementary vocational education (advanced studies)	An employee knows a specific algorithm for performing official duties An employee knows how to use a modern software product to optimize their functional responsibilities An employee can work in the digital economy	In accordance with the professional development program (the program must correspond to the position held/desired)

For students of secondary vocational schools and universities (bachelor's degree), applied educational programs on digital technologies are needed, aimed at mastering specialized software products and acquiring skills in working in various electronic communication channels; when preparing masters, it is necessary to study not only software products, but also to implement project activities aimed at creating an intelligent product based on digital technologies; graduate students-as part of the development of educational programs and research activities, it is recommended to create innovative digital projects and products as part of working research groups.

## 7. Conclusion

There are no systematic processes for the digital economy competencies formation in the “physical education and sports” industry. The professional standards of the physical culture and sports sphere do not include labor actions related to the availability of digital economy competencies. Educational organizations that train specialists in physical education and sports should develop and implement educational programs and disciplines / modules aimed at the formation of both general professional and professional digital competencies, taking into account the level of education.

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