

PAPER

## DEVELOPMENT AND IMPLEMENTATION OF DIGITAL COMPETENCIES IN THE TRAINING OF PHYSICAL EDUCATION AND SPORTS TEACHERS

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### Abstract

The rapid development of digital technologies is significantly transforming modern education, including the field of physical education and sports. The training of future physical education and sports teachers increasingly requires the integration of digital competencies that enable effective use of information and communication technologies in educational and training processes. This article examines the importance of developing digital competencies in the professional preparation of physical education and sports teachers. The study analyzes the concept and structure of digital competence, including the ability to use digital tools for planning, organizing, monitoring, and evaluating the educational process. Special attention is given to the integration of digital platforms, mobile applications, video analysis tools, and online learning resources in physical education and sports training. The article also discusses pedagogical approaches and methods that contribute to the effective formation of digital competencies among future teachers. The implementation of digital technologies enhances the quality of instruction, supports individualized learning, and improves the efficiency of monitoring students' physical development and performance. The findings highlight that systematic incorporation of digital competence development in higher education curricula is an essential factor in preparing competitive and innovative physical education and sports professionals.

**Key words:** digital competence, physical education teacher training, sports education, digital technologies, information and communication technologies (ICT), professional competence, higher education, innovative teaching methods.

### Introduction

The rapid development of digital technologies has had a significant impact on all areas of modern

**Compiled on:** March 14, 2026.

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society, including education. In recent years, the integration of information and communications technology (ICT) into the educational process has become an integral part of improving the quality and effectiveness of learning. Higher education institutions increasingly require training specialists who possess not only professional knowledge and practical skills but also a high level of digital competence. This requirement is particularly relevant for the training of future physical education and sports teachers, whose professional activities increasingly involve the use of digital tools and technologies.

Digital transformation in education has created new opportunities for organizing the teaching and learning process. Digital platforms, mobile applications, video analysis tools, learning management systems, and online communication technologies allow teachers to more effectively plan lessons, analyze student performance, track physical development, and provide individualized feedback.

At the same time, the effective use of digital technologies in physical education requires teachers to possess specific digital competencies. These competencies include the ability to search, evaluate, and manage digital information, use digital tools to develop educational materials, integrate multimedia resources into lessons, and apply digital technologies to assess and monitor student performance. Therefore, there is a need for further research on effective methods and strategies for developing and implementing digital competencies in the training of physical education and sport teachers.

The purpose of this article is to analyze the role of digital competencies in the professional training of physical education and sport teachers and explore approaches to their development and implementation in the educational process. The study aims to identify key components of digital competence and explore pedagogical conditions that facilitate the effective integration of digital technologies in the training of future physical education and sport specialists.

### Research methods

The study employed a combination of theoretical and analytical research methods. A review

and analysis of scientific literature, academic publications, and international studies related to digital competencies and teacher education were conducted to identify key concepts and approaches to the development of digital skills in physical education and sports training. Comparative analysis was used to examine different models and practices of integrating digital technologies into the educational process.

In addition, methods of generalization and systematization were applied to summarize existing pedagogical experiences and theoretical findings. These methods allowed the identification of effective approaches for the development and implementation of digital competencies in the professional training of physical education and sports teachers.

### Result

The results of the study indicate that the integration of digital competencies into the training of physical education and sports teachers significantly enhances the quality and effectiveness of the educational process. The analysis showed that the use of digital technologies, such as learning management systems, mobile fitness applications, video analysis tools, and online educational platforms, contributes to more effective planning, organization, and monitoring of both theoretical and practical components of physical education.

The findings also demonstrate that the development of digital competencies among future teachers improves their ability to design innovative teaching methods, provide individualized feedback to students, and analyze students' physical performance using digital tools. Moreover, the implementation of digital resources supports interactive learning environments and increases students' motivation and engagement in physical education activities. The study further revealed that systematic inclusion of digital competence development in higher education curricula plays a key role in preparing modern physical education and sports teachers. Therefore, the effective integration of digital technologies into teacher training programs is essential for improving professional competence and adapting educational practices to the demands of the digital era.

## Discussion

The results of this study confirm that the development and implementation of digital competencies in the training of physical education and sports teachers is becoming a critical requirement of modern education. The rapid digitalization of the educational environment has significantly changed traditional approaches to teaching and learning, creating new opportunities to improve the quality of professional training. In this context, digital competence is not only an additional skill but also an essential component of the professional competence of future teachers.

One of the key aspects identified in the study is the role of digital technologies in improving the effectiveness of the educational process in physical education and sports. Traditionally, physical education has been associated primarily with practical classes and direct physical interaction between teachers and students. However, the integration of digital technologies has expanded learning opportunities, allowing teachers to combine practical training with digital tools such as video analysis, mobile fitness apps, online platforms, and digital monitoring systems. These tools allow teachers to analyze movement techniques, track student progress, and provide more accurate feedback.

Another important issue discussed in the study is the pedagogical potential of digital technologies in developing student motivation and engagement. Digital tools can make the learning process more interactive and visually accessible. For example, video demonstrations, digital simulations, and motion analysis software enable students to better understand complex motor skills and more effectively correct their errors. Furthermore, the use of wearable devices and physical activity tracking apps can help students monitor their physical activity and health indicators, promoting self-regulation and responsibility for their physical development.

At the same time, the process of integrating digital technologies into physical education is associated with certain challenges. One of the main issues is the lack of adequate technical infrastructure and digital resources in some educational institutions. Limited access to modern equipment, software, and internet connections

can hinder the effective use of digital tools in the teaching process. Another issue is the insufficient level of digital competence among some teachers, which can reduce their willingness to implement innovative teaching methods.

Furthermore, methodological support plays a crucial role in the successful integration of digital technologies into physical education and sports training. Teachers need clear guidelines, practical recommendations, and professional development opportunities to help them effectively use digital tools in their teaching practice. Continuous professional development and workshops can significantly enhance teachers' digital competence and confidence in using new technologies.

Overall, the discussion shows that the systematic development of digital competencies in future physical education and sports teachers is a key factor in adapting the educational process to the demands of the digital age. The integration of digital technologies not only improves the effectiveness of teaching but also prepares future specialists for work in a technologically advanced educational environment. Therefore, higher education institutions should prioritize the development of digital competencies as an integral part of their physical education and sports teacher training programs.

## Conclusion

In conclusion, the development and implementation of digital competencies in the training of physical education and sports teachers play a crucial role in improving the quality of modern education. The integration of digital technologies into the educational process enhances teaching effectiveness, supports innovative pedagogical approaches, and promotes students' engagement and motivation.

The study shows that systematic incorporation of digital competence development into teacher education programs is essential for preparing future specialists who can effectively use digital tools in their professional practice. Therefore, higher education institutions should strengthen the use of digital technologies and provide appropriate methodological and technical support to ensure the successful training of competitive and digitally competent physical education and sports teachers.

### Recommendation.

1. Higher education institutions should integrate digital competence development into the curriculum of physical education and sports teacher training programs.

2. Special training courses and workshops should be organized to improve teachers' skills in using digital technologies in the educational process.

3. Educational institutions should provide adequate technical infrastructure, including access to digital platforms, software, and modern equipment.

4. Teachers should actively use digital tools such as video analysis, mobile applications, and online learning resources to enhance teaching effectiveness and student engagement.

5. Continuous professional development programs should be implemented to support the long-term development of digital competencies among physical education and sports teachers.

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