

**DIGITAL ENVIRONMENT OPPORTUNITIES IN DEVELOPING RESEARCH
COMPETENCIES OF PEDAGOGICAL STAFF**

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Abstract. This article examines the opportunities and significance of the digital environment in the process of developing the research competencies of pedagogical staff. It analyzes the role of digital learning platforms, electronic libraries, scientific databases, online research tools, and artificial intelligence-based technologies in organizing and improving the effectiveness of teachers' research activities. In addition, the possibilities of developing competencies related to working with information, data analysis, visualization, and presentation of scientific results through the digital environment are highlighted. The article substantiates that the rational use of the digital environment contributes to the development of independent research activity, enhancement of innovative thinking, and improvement of education quality.

Keywords: pedagogical staff, research competencies, digital environment, digital technologies, scientific research, online learning platforms, information resources, innovative activity.

Introduction

In the context of globalization and digitalization, the requirements placed on the education system are becoming increasingly complex. The rapid development of society, science, and technology necessitates that pedagogical staff possess not only professional-pedagogical but also research competencies. Teachers' ability to conduct research, analyze problems, draw evidence-based conclusions, and implement innovative ideas in practice is one of the key factors in improving the quality of education.

Today, the digital environment creates broad opportunities for organizing and developing the research activities of pedagogical staff. Electronic learning platforms, scientific databases, digital libraries, online collaboration tools, and artificial intelligence-based technologies enable teachers to carry out research activities efficiently, promptly, and systematically. Therefore, substantiating the opportunities of the digital environment in developing research competencies and identifying practical mechanisms remains a pressing issue.

Research Methods and Materials

This study aims to identify and substantiate the opportunities of the digital environment in developing the research competencies of pedagogical staff and employs a комплекс approach using general scientific and specific pedagogical research methods. In particular, analysis and synthesis were used to examine and systematize scientific-pedagogical literature, regulatory documents, and contemporary studies. Comparative methods were applied to compare traditional and digital-based research activities.

Within the framework of empirical research, observation, interviews, and questionnaires were used to determine the level of digital environment usage by pedagogical staff, their attitudes toward research activities, and existing challenges. Diagnostic methods were also applied to assess the level of development of teachers' research competencies. The collected data were processed and generalized using statistical and logical analysis methods.

The research materials included pedagogical staff working in higher and general secondary education institutions, documents related to their research activities, electronic learning platforms, digital libraries, and information obtained from scientific databases. The use of modern digital tools and online resources helped reveal broader opportunities for developing research competencies.

Results and Discussion

The results indicate that using the digital environment in developing research competencies of pedagogical staff is highly effective. Analysis showed that teachers who regularly use digital learning platforms, electronic libraries, and scientific databases demonstrate significantly improved skills in searching, selecting, and analyzing scientific information. They also showed greater independence and activity in defining research topics, identifying problems, and proposing scientific hypotheses.

Empirical data revealed positive dynamic changes in teachers' research competencies. In particular, the use of digital tools contributed to the development of skills in data processing, statistical analysis, visualization of research results, and electronic presentation. Online collaboration platforms strengthened teachers' communication and cooperation competencies through experience sharing and joint research activities.

Furthermore, the study found that the digital environment increases teachers' motivation for research activities. Modern digital tools simplified the research process and saved time and resources, which in turn enhanced teachers' inclination toward innovative approaches and positively influenced their professional development.

Conclusion

The conducted research demonstrates that the digital environment is an important and effective means of developing the research competencies of pedagogical staff. Digital learning platforms, scientific databases, electronic libraries, and online collaboration tools contribute to the formation and improvement of competencies related to conducting research, analyzing information, and presenting scientific results.

The study also confirmed that the digital environment increases teachers' interest and motivation in research activities, develops independent working skills, and strengthens innovative thinking. At the same time, effective use of the digital environment requires sufficient digital literacy, methodological preparedness, and continuous learning.

In conclusion, the systematic, purposeful, and scientifically grounded use of digital environment opportunities in developing the research competencies of pedagogical staff contributes to improving education quality, ensuring professional development of teachers, and training competitive personnel that meet the requirements of modern education systems.

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