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## DEVELOPMENT OF DIGITAL COMPETENCIES IN FUTURE LECTURERS

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**Abstract.** The purpose of this research paper is to identify and theoretically substantiate the component structure of the phenomenon of "teacher's digital competence" based on the analysis of scientific and pedagogical literature. A theoretical model of the structure of digital competence of a teacher has been formed. These components describe the competencies required by the teacher for the effective implementation of their professional activities. The results of the research can be used as the basis for the development of optional courses for students of the pedagogical direction of training, programs for advanced training courses and additional education for lecturers.

**Keywords:** digitalization of education, digital technologies, digital competence of lecturer.

抽象的。 本研究论文的目的是在对科学和教学文献的分析的基础上，识别并从理论上证实“教师数字能力”现象的组成结构。教师数字能力结构的理论模型已经形成。这些组成部分描述了教师有效实施其专业活动所需的能力。研究结果可作为教学方向的学生开发选修课程、高级培训课程计划和讲师补充教育的基础。

关键词：教育数字化，数字技术，讲师数字能力。

### Introduction.

Digitalization as the main trend of the modern world has taken a leading position in education. The main condition for such development is the modernization of the national educational system, aimed at training a graduate who is able to live and carry out his professional activities in the digital environment, taking into account the requirements for new professions and changing values of society. In the context of the digitalization of the education sector, the professional activity of a teacher is radically

changing. The teacher becomes, first of all, "an organizer and motivator of individual and group educational activities of students, an intermediary between the virtual and real world, a mentor, a navigator of the real social and professional world, a kind of "integrator" of various living spaces of the digital generation".

The effectiveness of using digital technologies in the educational process has been proven by the practice of organizing distance learning during the COVID-19 pandemic. They turned out to be the instrument that made it possible to preserve

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the continuity of the educational process. At the same time, the forced transition to distance learning revealed the existing problems in this area.

In this regard, the issues of training future teachers who have the skills and abilities of organizing the educational process in a digital environment, who use digital technologies in their professional activities and who know the features of the “digital generation” and the methods of its teaching and upbringing, are extremely relevant and become the subject of scientific and pedagogical research and broad public discussion. Pedagogical universities are revising the training programs for bachelors in the pedagogical direction of training. The result of such activity should be a graduate with a high level of proficiency in the skills of working with digital devices, pedagogical technologies and methods of creating and using digital educational resources to improve the effectiveness of the educational process.

### **Methods of research.**

Thus, the structure of the teacher's professional competence is supplemented by a new component - digital competence, and the level of the teacher's professionalism directly depends on the level of this competence. To solve this problem, it is necessary to form digital professional competence in future teachers.

The purpose of this study is to identify and theoretically substantiate the component structure of the phenomenon of “digital competence of a teacher”.

The concept of "digital competence of a teacher" is also considered by foreign experts. The development of a complex of professional

competencies of a teacher in the context of digitalization of education is carried out under the guidance of the Education Committee of the European Union, where in 2017 the Digital Competence of Educators (DigCompEdu) profile of teachers was proposed. It is of a recommendatory nature and describes 22 competencies in which the main focus is not on technical skills, but on the teacher's ability to use digital technologies to improve the efficiency of the educational process. S. Kluser, S. Carretero, M. Giralés, W. Okiff (2018) describe the practice of implementing the European digital competence system (DigComp), consisting of 50 case studies and tools [14].

G. Ottestad, M. Kelentrich (2013) define the digital competencies of a teacher as a set of components: general (general knowledge and skills that a teacher must have in order to function as digital educators); didactic (reflects the digital specificity in each subject) and professionally oriented (describes the digital features of the extended teaching profession).

K. Zirera and N. Seal (2019) emphasize that the introduction of digital technologies in education will be effective if the leading place in it is occupied not by technology, but by the teacher and pedagogy: “The main focus of the responsibility of education has always been human development. A person in pedagogy is both a starting point of reference and an end result. This approach should be applied to the digitalization of education. Digital technologies cannot replace the pedagogical component of the educational process. Moreover, digitalization should be subordinated to pedagogy”.

E. Meyers believes that the development of digital technologies and tools requires new

knowledge and skills from the teacher: the teacher must ensure that students master digital tools in order to advance the development of the younger generation and help them master the necessary competencies to expand the availability of new knowledge.

At the University of Oxford, a study of pedagogical support systems for students in digital learning was carried out, which showed that teachers play a leading role in the development of new skills by their students". J. Yarbrough emphasizes that in the digital space it is "the teacher who determines the pace of learning, the order of obtaining subject knowledge. The teacher is responsible for the progress of the student".

Thus, a review of the works of foreign authors shows that the comprehension, description and structuring of the teacher's digital competencies, forming the professional digital competence of the teacher, is a priority area of scientific research and indicates the expansion of the content of his activities, changes in the requirements for training and conditions for the professional development of pedagogical employee.

In 2017, The Boston Consulting Group (BCG), together with Russian companies (Sberbank, NRU HSE, WorldSkills Russia, etc.) conducted a study "Russia 2025: From Personnel to Talents" to study the problem of Russia's competitiveness in the global economic space. The result of this study was the "Target Model of Competencies 2025", in which three groups of skills are distinguished: cognitive (self-development, independence, self-awareness, learning, managerial skills, striving to achieve a result, etc.), social and behavioral skills.

knowledge (communication, skills of interpersonal and intercultural interaction in the digital environment, etc.) and information (information management, creation of an information product, etc.), necessary for the competitiveness of a specialist in the digital economy. This model, in addition to the technical skills of working with digital equipment, includes cognitive and socio-behavioral competencies aimed at ensuring a comfortable existence, effective communication and human self-development in the digital environment.

The analysis of scientific and pedagogical literature showed that the concept of "digital competence of a teacher" is not fully studied (there are no clear definitions of this phenomenon, its structure has been little studied). In our study, under the digital competence of a teacher we will mean a set of competencies that are constantly updated in the context of improving digital technologies, which are necessary for a teacher to carry out professional activities in a digital educational environment, and we will propose a component content of this concept.

The methodological basis of this research is the competence-based, system-activity and personality-oriented approaches.

The current stage of development of the domestic system of professional education is characterized by the implementation of the competence-based approach, which is the methodological basis of the federal state educational standards of higher professional education of the third generation and is a necessary condition for the modernization of the system of higher professional education in accordance with world trends, focusing on the activity side of the result

and the practical component of the educational process at the university.

In the context of the digitalization of the higher education system and the need to form digital professional competence of the future teacher, the systemic-activity approach to the study of this phenomenon acquires special relevance.

The digital transformation of education is proceeding quickly, the list of digital technologies for the implementation of the educational process is constantly being updated and expanded.

Achieving a student of the level of digital competence necessary for professional activity presupposes the acquisition of not only the skills and abilities of organizing the educational process in a digital educational environment, but also the achievement of personal skills and abilities in this area, reflection of their activities, the development of motivation for further study of digital technologies. In these conditions, the training of future teachers should contribute to the development of their readiness to carry out activities with the prefix “self”: independence, self-motivation, self-education, self-development, self-determination, etc.

Analysis of scientific and pedagogical literature and research results in the field of digitalization of education, consideration of the concept of “digital competence of a teacher” from the standpoint of competence-based, system-activity and personality-oriented approaches allowed the author to draw conclusions about the component composition of the considered competence.

Comprehension of the theoretical analysis of scientific and pedagogical literature and the application of the above methodological

approaches to disclose the component composition of the digital competence of the teacher allowed us to conclude that the structure of the considered competence can be represented by components that take into account the characteristics of professional and pedagogical activity: motivational and personal, cognitive, activity and reflective-evaluative.

The motivational and personal component of the digital professional competence of a teacher in modern conditions is of particular interest, since it reflects a person's conscious need to use digital technologies in professional activities.

The reflexive-evaluative component of digital professional competence includes the ability to analyze and self-analyze the performed activity, agree on goals, methods and results obtained, understand one's style of activity, readiness for its creative change, readiness for self-improvement and self-development, skills and abilities self-control, self-regulation, self-awareness and self-realization. The ability of a teacher to reflect in many respects determines the success of his professional actions in new conditions for him. Therefore, the importance of pedagogical reflection especially increases in innovative activities.

Cabezas-González points out that “every student needs to realize his positive and negative qualities, to correlate with the standard of professionally important qualities (emotional-volitional, intellectual, business, worldview) in order to start conscious work on oneself, which is an important part of professional and personal self-determination”.

## **Results**

In the context of digital education, the reflective-evaluative component makes it possible to realize professional difficulties arising in the process of mastering digital technologies, to realize the level of readiness to use these technologies in the educational process and the degree of satisfaction with such activities.

## Conclusion

This research work opens up opportunities for further research in the field of determining the structure of the phenomenon of “digital competence of a teacher”, which is one of the components of the professionalism of a modern teacher that meets the requirements of society in the digital economy. The proposed component composition of the phenomenon of “digital competence of a teacher” can be used as the basis for the development of elective courses for students in the pedagogical direction of training, programs for advanced training courses and additional education for teachers.

## REFERENCES

- Cabezas-González, Marcos, Sonia Casillas-Martín, and Francisco José García-Peñalvo. "The digital competence of Pre-service Educators: the influence of personal variables." *Sustainability* 13.4 (2021): 2318.
- Minter, Daniel J., et al. "The future comes early for medical educators." *Journal of general internal medicine* 36.5 (2021): 1400-1403.
- Biletska, Iryna O., et al. "The use of modern technologies by foreign language teachers: developing digital skills." *Linguistics and Culture Review* 5.S2 (2021): 16-27.
- Alarcón, Rafael, Elena del Pilar Jiménez, and María Isabel de Vicente-Yagüe. "Development and validation of the DIGIGLO, a tool for assessing the digital competence of educators." *British Journal of Educational Technology* 51.6 (2020): 2407-2421.
- Lauricella, Alexis R., Jenna Herdzina, and Michael Robb. "Early childhood educators' teaching of digital citizenship competencies." *Computers & Education* 158 (2020): 103989.
- Falloon, Garry. "From digital literacy to digital competence: the teacher digital competency (TDC) framework." *Educational Technology Research and Development* 68.5 (2020): 2449-2472.
- Habibi, Akhmad, et al. "Preparing future EFL teachers for effective technology integration: What do teacher educators say." *Asian EFL Journal* 21.2 (2019): 9-30.
- Decker, Sharon, et al. "The evolution of simulation and its contribution to competency." *The Journal of Continuing Education in Nursing* 39.2 (2008): 74-80.
- McLean, Michelle, Francois Cilliers, and Jacqueline M. Van Wyk. "Faculty development: yesterday, today and tomorrow." *Medical teacher* 30.6 (2008): 555-584.
- Peters, Kristine. "m-Learning: Positioning educators for a mobile, connected future." *International Review of Research in Open and Distributed Learning* 8.2 (2007).
- Hashimova Naima Abitovna Градиенты и скалярные отношения



- print/feb2020/Essence-Of-Investment-Potential-And-Patterns-Of-Investment-
- Hashimova Naima Abitovna, Asror Norov. Synergetic Development Of Investment Processes. <https://www.ijstr.org/final-print/feb2020/Synergetic-Development-Of-Investment-Processes.pdf>
  - Hashimova Naima Abitovna, Buranova Manzura Abdukadirovna, Abdurashidova Marina. Priority areas for the development of investment potential of Uzbekistan. <https://www.psychosocial.com/article/P R280603/24351/>
  - Hashimova Naima Abitovna, Bakhodirova Khilola, Aliyev Azimjon. Synergetic Progress of Investment Procedures. <https://www.psychosocial.com/article/P R280602/24349/>
  - Hashimova Naima Abitovna, Marina Abdurashidova, Manzura, Buranova, Gulnara Saidova. Features Of Financing Innovative Projects In The Republic Of Uzbekistan. <https://www.ijstr.org/final-print/apr2020/Features-Of-Financing-Innovative-Projects-In-The-Republic-Of-Uzbekistan.pdf>
  - Hashimova Naima Abitovna, M.L. Tursunkhodjaev. Development Of Channels Of Intellectual Capital Movement In The System Of Innovative Cooperation In <https://archives.palarch.nl/index.php/jae/article/view/1326>
  - Hashimova Naima Abitovna, Saidkarimova MatlyubaIshanovna Usmanova Rano Mirjalilovna. Economic Mechanisms Of Formation And Use Of Intellectual Capital In The System Of Innovative Cooperation Of Education, Science And Production. [https://ejmcm.com/article\\_3306\\_78391695fa6cbb298b8a05ab46787d00.pdf](https://ejmcm.com/article_3306_78391695fa6cbb298b8a05ab46787d00.pdf)
  - Hashimova Naima Abitovna. The Essence of the Investment Potential and Patterns of the Investment Fields in the Economy. <https://www.izu.edu.tr/docs/default-source/duyuru/adam-bildiri.pdf>
  - Hashimova Naima Abitovna, I. Bakiyeva. Logical Organization of Investment Climate and its Influence on Investment Potential. <http://higherlogicdownload.s3.amazonaws.com/INFORMS/a19154ba-c5e4-4a42-af42-c6b23c694b8/UploadedImages/MRIJ%202017%20Final%20Online%20Version.pdf#page=77>
  - Hashimova Naima Abitovna. Стратегия и приоритетные направления развития инвестиционного потенциала на долгосрочную перспективу <https://ifmr.uz/page/materialy-xi-foruma-ekonomistov-strategiceskoe-planirovanie-vaznyi-faktor-stabilnosti-ustoicivogo-socialno-ekonomiceskogo-razvitiya-strany-i-regionov>