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INFORMATION COMPETENCE OF THE MODERN TEACHER IN THE CONTEXT OF THE DIGITAL TRANSFORMATION OF EDUCATION

Abstract. The article explores the essence of teachers' informational competence as a pivotal component of professional activity in the context of the digital transformation of education. The conceptual framework is analyzed, the structural components of competence are delineated, and methodological approaches to its development are presented. It is highlighted that the contemporary educational environment is characterized by the rapid advancement of digital technologies, the increasing volume of information, and the necessity for the ability to critically evaluate, systematize, and effectively apply information in the educational process. Informational competence encompasses a set of skills, including searching, analyzing, interpreting, storing, creating, and transmitting information using digital tools. The article also underscores the interrelation between informational literacy, media literacy, digital culture, critical thinking, and academic integrity.

It is shown that the formation of information competence is an important condition for increasing the effectiveness of learning, developing independence and integrating innovative methods into practice. Special attention is paid to the role of digital resources, educational platforms that create opportunities for personalized learning, distance interaction and the formation of a digital educational environment.

The main challenges facing teachers in the context of digitalization are considered: the need for constant updating of digital skills, working with large amounts of information, ensuring data security and organizing digital interaction. Based on the scientific works of Ukrainian researchers, the challenges of digitalization and ways to improve the quality of digital education of teachers are analyzed. The results of the study summarize the characteristics of the interpretation of the concepts of digital culture, digital literacy and digital competence of a teacher in the context of modern requirements. The importance of information competence for the modernization of the educational process and the implementation of the Concept of the New Ukrainian School is substantiated.

It is noted that a teacher's informational competence constitutes a key factor in the successful modernization of schools and ensures the effective functioning of the educational process amid the changes driven by digital transformation.

Keywords: professional training of teachers, information competence, digitalization, digital transformation of education, teacher, digital literacy, digital culture.

ІНФОРМАЦІЙНА КОМПЕТЕНТНІСТЬ СУЧАСНОГО ПЕДАГОГА В КОНТЕКСТІ ЦИФРОВОЇ ТРАНСФОРМАЦІЇ ОСВІТИ

Анотація. У статті розкрито сутність інформаційної компетентності вчителя як ключового компонента професійної діяльності за умов цифрової трансформації освіти. Проаналізовано поняттєвий апарат, окреслено структурні компоненти компетентності й представлено методологічні підходи до її формування. Акцентується, що сучасний освітній простір характеризується стрімким розвитком цифрових технологій, зростанням обсягу інформації та потребою в умінні критично оцінювати, систематизувати й ефективно застосовувати її в освітньому процесі. Інформаційна компетентність включає сукупність навичок: пошуку, аналізу, інтерпретації, зберігання, створення та передачі інформації за допомогою цифрових інструментів. У статті наголошується на зв'язку інформаційної грамотності з медіаграмотністю, цифровою культурою, критичним мисленням та академічною доброчесністю.

Показано, що формування інформаційної компетентності є важливою умовою підвищення ефективності навчання, розвитку самостійності та інтеграції інноваційних методів у практику. Особлива увага приділяється ролі цифрових

ресурсів, освітніх платформ, які створюють можливості для персоналізованого навчання, дистанційної взаємодії та формування цифрового освітнього середовища.

Розглянуто основні виклики, що стоять перед вчителями в умовах цифровізації: необхідність постійного оновлення цифрових навичок, робота з великими обсягами інформації, забезпечення безпеки даних та організація цифрової взаємодії. На основі наукових праць українських дослідників проаналізовано виклики цифровізації та шляхи підвищення якості цифрової освіти педагогічних працівників. Результати дослідження узагальнюють характеристики інтерпретації понять цифрової культури, цифрової грамотності та цифрової компетентності вчителя в контексті сучасних вимог. Обґрунтовано значення інформаційної компетентності для модернізації освітнього процесу та реалізації Концепції Нової української школи.

Зазначено, що інформаційна компетентність вчителя є одним із ключових чинників успішної модернізації школи та забезпечує якісне функціонування освітнього процесу в умовах змін, спричинених цифровою трансформацією.

Ключові слова: професійна підготовка вчителів, інформаційна компетентність, цифровізація, цифрова трансформація освіти, педагог, цифрова грамотність, цифрова культура.

INTRODUCTION

The problem formulation. The digital transformation of Ukrainian education has substantially redefined the requirements for teachers professional activities and highlighted the imperative of developing their informational competence. In the context of rapid technological change, teachers are expected to do more than just master digital tools; they must also be able to critically evaluate information, design high-quality educational content and ensure the digital safety of their students. However, research and practical experience suggest that the development of teachers information literacy remains uneven, hindering the implementation of contemporary educational models. This situation necessitates the scientific substantiation of methods and methodological frameworks for cultivating informational competence under current conditions. As a key trend in modern educational development, digitalisation transforms all fundamental aspects of the educational process, including objectives, content, pedagogical methods, organisational forms and instructional tools, across all levels of education, from primary to higher. These requirements are further reflected in the Digital Competence Framework for Pedagogical Workers (Conceptual and Reference Framework for Digital Competence of Pedagogical and Scientific-Pedagogical Workers).

Digital Competency Framework for Pedagogical and Scientific-Pedagogical Workers: Project. Ministry of Digital Transformation of Ukraine), effective communication in a digital learning environment involves not only mastering online tools, but also the ability to moderate educational discussions and integrate digital resources to support interactive learning. This framework not only outlines levels of digital literacy, but also defines new approaches to professional communication, making it more accessible, flexible, and ethical.

Digital technologies are developing rapidly and transforming all areas of society, including education, which means new demands are being placed on teachers. Changing communication models, the emergence of electronic educational resources and platforms for distance and blended learning, and the active use of social networks and digital services mean that traditional teaching methods can no longer ensure an adequate standard of education. Teachers now face a dual challenge: they must not only master modern digital tools themselves, but also teach their students to use them rationally, critically and safely. In the context of reforming Ukrainian education, implementing the Concept of the "New Ukrainian School" and transitioning to a digital educational environment, the issue of developing teacher information competence is gaining strategic importance. Thus, the Concept of the New Ukrainian School states that information and digital competence includes the ability to confidently and critically apply information and communication technologies to create, search, process, and exchange information in professional activities, as well as information and media literacy, security, and ethical use of information (Concept of the New Ukrainian School).

The relevance of the formation of information competence is stated in particular in the Concept of the Development of Digital Competencies by 2025, the document emphasizes that the main tasks that will contribute to digital development are the formation of digital skills and digital competencies in society (Concept of the Development of Digital Competencies by 2025 and its significance).

In this document, digital competence is conceptualized as a dynamic integration of knowledge, skills, abilities, cognitive strategies, attitudes, and other personal attributes in the domain of information, communication, and digital technologies, which determines an individuals capacity to effectively participate in social, professional, and educational activities mediated by these technologies. The framework encompasses the cultivation of digital skills across all age cohorts; the establishment of conditions for the optimal utilization of digital resources, including educational platforms and assessment instruments; the enhancement of awareness concerning the hazards of the digital environment; the formulation of legal and methodological instruments to underpin state policy in the field of digital competences; and the development of indicators for the systematic monitoring of digital literacy. The Concept of the Development of Digital Competencies by 2025 delineates the principal challenges associated with advancing digital competence in Ukrainian society, articulates strategic measures to address these challenges, and specifies the anticipated outcomes of its implementation. It constitutes the foundation for the formulation of a national strategy and a strategic action plan aimed at the coordinated advancement of digital competencies throughout society (Concept of the Development of Digital Competencies by 2025 and its significance).

Analysis of recent research and publications. The information competence of a modern teacher was studied by O. Barna, V. Bykov, S. Goncharenko, G. Selevka, O. Ovcharuk, M. Zhaldak, A. Chychuk, M. Morse, etc. The concept, structure of digital competence, and its levels are highlighted in the studies of N. Morse, O. Bazelyuk, I. Vorotnikova,

N. Dementievska, etc. (Morse, Bazelyuk, Vorotnikova, Dementievska, Zakhar, Nanaeva, Chernikova, 2019), the definition of digital competence is given and different approaches to its interpretation in pedagogical discourse are shown in the works of O. Ovcharuk, O. Spirin (Spirin, Ovcharuk. 2021), the levels and stages of the formation of a teacher's digital competence are highlighted in the studies of M. Kryvonos (Kryvonos, 2023). Despite significant scientific achievements, the issues of integrating digital tools into the professional activities of teachers in the context of digitalization and modern challenges remain insufficiently analyzed, which makes further research relevant.

THE AIM AND RESEARCH TASKS

The article's purpose is to theoretically substantiate the essence of the information competence of a modern teacher and determine effective methodological approaches to its formation in the conditions of digital transformation of education.

RESEARCH METHODS

A number of methods were used in the research process, including: analysis, comparison, and systematization of psychological and pedagogical literature on the issue of teacher information competence.

RESULTS OF THE RESEARCH

The digital revolution in education is causing fundamental changes to the professional activities of modern teachers and creating new requirements for their professional competence. The challenge lies in determining the content, structural components and mechanisms for developing the information literacy of modern teachers, and in finding effective ways to develop this skill in line with the challenges posed by the digital transformation of education.

We agree with the opinion of O. Storonska and M. Vorobel, who interpret the concept of "digital competence" as an integral characteristic that combines digital literacy and digital culture, encompassing knowledge, skills, values, worldviews and ethical orientations regarding the use of digital technologies in professional activities. This approach allows us to consider the digital competence of a teacher as a key factor in its successful implementation in the conditions of intensive digital transformation of education (Storonska, & Vorobel, 2023).

Although the issue of teacher training in the context of the digitalisation of the Ukrainian education system has been the subject of many scientific studies, a number of issues remain unresolved, including those related to the conceptual and categorical apparatus. The results of scientific research reveal various aspects of this problem, such as the professional development priorities of modern teachers in the context of digital challenges (The Concept of the Development of Digital Competencies by 2025 and its significance), the essence and structure of digital competence (Morse, Vember, & Gladun, 2019), features of the development of digital skills of teachers at different levels of the education system, especially general education schools (Zhaldak, 2013), etc. A significant number of scientific studies reveal the impact and consequences of the digitalization of education on the professional activities of a teacher, in particular changes in its goals, objectives, and directions (Ryabova, & Yelnikova, 2020).

Drawing on the findings of our analysis of the sources, we conclude that information competence is not only an integral component of ICT competence, but also a vital resource in ensuring educational quality, academic integrity, digital security, and pedagogical autonomy. The studies examined the development and manifestation of teachers information competence in the context of the digital transformation of education. The digital transformation of the education system leads to fundamental changes in the professional activities of teachers, which subsequently places new requirements on their professional competence. In particular, a significant update and expansion of the tasks of pedagogical activity under the influence of the digitalization of education requires the formation of digital skills and abilities of the teacher as integral components of his professional competence (Kryvonos, 2023).

Digitalization is a reflection of the modern paradigm of social development, where competitiveness and efficiency appear as vital qualities of a specialist.

We state the following based on the results of the analysis of the source database: in the Ukrainian scientific discourse on the formation of information competence in higher education students, a number of concepts have emerged that characterise this component of a modern teacher's professional competence in the context of the digital transformation of education (see Table 1). These include, in particular, the concepts of digital literacy, digital culture, digital awareness, digital competence, etc.

Table 1

Information competence of a teacher in the dimension of scientific discourse

Concept	Definition	Author	Source
Information competence of the teacher	The ability to adapt scientific information to the specifics of the ped-agogical process, formu-late pedagogical prob-lems and use various information and com-munication tools to solve them.	O. Shelever, L. Kapitan, Y. Bordian	Shelever O., Kapitan L., Bordiyan Ya. Information competence as a basis for the professional develop-ment of a modern teacher. Pedagog-ical innovation: modernity and pro-spects. 2025. No. 7. Pp. 125-129.
Information literacy	Skills in working with information in educa-tional and professional activities and the ability to search for, process, and apply it.	N. Vakulenko	Vakulenko N. Information compe-tence of future specialists in the field of technological education. Ukraini-an Professional Education. 2021. No. 9-10 pp. 15–28.

| Information literacy | A system of knowledge, skills and abilities that allows you to effectively work with information in profes-sional and educational activities. | M. Bilyanska | Bilyanska M. M. Information com-petence as a component of profes-sional training of a future teacher. Problems and innovations in natural science, mathematics, technological and vocational education: collection of materials of the 13th International Scientific and Practical Online Inter-net Conference, Kropyvnytskyi, June 13-28, 2022. Kropyvnytskyi: RVV TSPU named after V. Vynnychenko, 2022. P. 113-115. |
| Information and digital competence of the teacher | The ability to navigate in the information space, receive infor-mation and operate with it in accordance with one's own needs and the requirements of a modern high-tech socie-ty. | O. Polyakova | Polyakova O. V. Information and digital competence of a teacher as a factor in the implementation of a culture of democracy in education V All-Ukrainian scientific and practical Internet conference "Implementation of the principles of democracy in preschool and primary education: balance, awareness, experience", September 15, 2022, Kyiv, Ukraine. |

Analysing the scientific approaches of individual Ukrainian researchers (see Table 1) shows that information competence is interpreted as an individual's ability to search for, critically analyse, process and ethically use information in professional activities. The most generalised and relevant approach to modern educational challenges is presented in the Concept of the New Ukrainian School, in which a teachers information and digital competence combines information and media literacy, ICT proficiency, and adherence to the principles of digital security and academic integrity.

The relevance of the formation of information competence is reinforced, in particular, by the Concept of the Development of Digital Competencies by 2025, which states that the main tasks that will contribute to digital development are the formation of digital skills and digital competencies in society. This document additionally identifies priority areas and main tasks for the development of digital competencies, increasing the level of digital literacy of the population; provides for the development of a methodology and conducting research in the field of digital competencies, assessing their level in different segments of the population, in particular among teachers; outlines the framework of digital competencies and creates indicators for their monitoring; describes ways to obtain digital education and continuous development of professional digital competencies during advanced training, etc. (Concept of the Development of Digital Competencies by 2025 and its significance; Morse, Vember, & Gladun, 2020).

The digital metamorphosis of education engenders profound alterations in the structuring of the educational process, communication between participants in the educational milieu, and the role of the teacher. The traditional role of the teacher as a source of knowledge is evolving into that of a facilitator, moderator and mentor who can work with large amounts of information, use digital resources, provide a safe learning environment and promote students digital literacy. This is why information competence is becoming a key element of a teachers professional activity. A modern teacher operates in conditions of the digital transformation of education, which requires a significant expansion of the content and structure of their professional activity. The structure of information competence is quite complex, which requires taking into account the components of information competence in the professional training of a future teacher. Table 2 presents some views of Ukrainian scientists on this problem.

Table 2

**Approaches of Ukrainian scientists to determining
the components of a teacher's information competence**

Author	Year	The main components of in-formation literacy
O. Spirin	2011	Information literacy; the ability to search, analyze and evaluate information; the use of ICT in professional activities.
N. Morse	2018	Digital literacy; ability to work with digital educational re-sources; creation of one's own digital content; digital com-munication.
V. Bykov	2019	Information and communica-tion skills; working in a digital educational environment; ped-agogical design of digital re-sources.

Source: (Spirin, 2011; Morse, 2018; Bykov, 2019)

Based on the work of Ukrainian researchers (Spirin, 2011; Morse, 2018; Bykov, 2019) (see Table 2), it is advisable to consider the information competence of a teacher as an integrated quality that includes: the ability to work with information (search, critical analysis, structuring); the ability to use digital tools for learning; creating one's own digital

educational content; compliance with ethical norms and security requirements in the digital environment; awareness of the influence of the information space on the personal development of students.

The transformation of education into a digital format is altering the professional roles of a contemporary educator: they become not only the transmitter of knowledge, but also the mediator of educational digital processes, the architect of multimedia materials and a guide in digital literacy of learners. As V. Bykov (2019) notes, the digital educational environment demands new professional competencies from teachers and requires them to have a high level of information and communication skills. In this context, the key manifestations of the transformation of education are blended and distance learning, the use of digital platforms (Google Classroom, Moodle, "All-Ukrainian School Online"), the active creation of digital content and the formation of media literacy as an important component of the competency-based approach of the New Ukrainian School. Based on the work of the above-mentioned scientists, it is possible to single out effective directions for the formation of information competence of a primary school teacher, which take into account the specifics of working with younger schoolchildren. These directions include the formation of information culture and digital literacy of a teacher, which involves the ability to consciously work with information and understand the role of information and communication technologies in the educational process of primary school. It is important to master the pedagogically appropriate use of ICT in teaching, in particular the use of digital educational platforms, interactive tools and educational applications in accordance with the age and psychological and pedagogical characteristics of students. A significant role is played by the development of skills to create and adapt digital educational resources, such as presentations, interactive exercises and electronic didactic materials. Special attention should be paid to the formation of skills for safe and ethical work in the information environment, which includes compliance with copyright norms, digital security and responsible online behavior. At the same time, an important direction is the development of the teacher's critical thinking in assessing the quality and reliability of information, as well as the ability to adapt it to the educational opportunities of younger students. In general, the formation of information competence of a primary school teacher also involves an orientation towards continuous professional self-development in a digital educational environment.

The above points show us that there are a number of ways to develop information and communication skills.

1. Competency-based approach – compliance of the content of the training with the requirements of the teacher's professional standard.

2. Modular-resource approach – formation of digital skills through work with interactive modules and online tasks.

3. Project-based learning – development of teachers' own digital educational products.

4. Practically oriented approach – implementation of pedagogical cases from the real digital environment of the school.

5. Mentoring model – support of teachers by educational coaches and digital tutors.

6. Integration of media education – development of critical thinking, ability to work with information and create media content.

Consequently, the notion of digital competence of a teacher in contemporary scientific literature is ordinarily generalised to a sophisticated attribute of his personality, which is predicated on a system of knowledge, skills, worldview, value orientations and ethical attitudes related to the utilisation of digital technologies in professional and pedagogical activities. The content of this concept emphasises its integrated nature as a dynamic combination of knowledge, experience, values, attitudes and ways of thinking, which ensure a teacher's ability to perform their professional duties successfully.

CONCLUSIONS AND PROSPECTS OF FURTHER RESEARCH

It has been concluded based on the analysis of regulatory documents and works of Ukrainian scientists that information competence is a complex pedagogical phenomenon, one of the basic competencies of a modern teacher in the context of the digital transformation of education and a key condition for his successful professional activity. A teacher's information competence comprises technological, information-analytical, communicative, and ethical components. Information competence should be developed through competency-based, practice-oriented, project-based and modular approaches. The Ukrainian scientific school has developed significant theoretical provisions on structuring a teacher's digital competence which require further integration into educational practice. Developing a teacher's information competence improves the quality of education and facilitates the implementation of the Concept of the New Ukrainian School. It also enables the educational process to adapt to the conditions of digitalisation and military challenges. Further research could focus on analysing and experimentally verifying effective pedagogical conditions and models for developing the information competence of primary school teachers in the context of digital and blended learning.

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