Chapter III. THEORETICAL-METHODICAL FUNDAMENTALS OF PROFESSIONAL TRAINING OF FUTURE TEACHERS

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TRAINING FUTURE SPECIALISTS TO USE DIGITAL TECHNOLOGIES IN TEACHING LANGUAGE AND LITERATURE DISCIPLINES

Abstract. The article examines the features of training future specialists for the effective use of digital technologies in the process of teaching language and literature disciplines. The role of teachers' digital competence is analyzed, and the challenges and prospects of implementing educational innovations are identified. The European Digital Competence Framework (DigComp 2.0) and the views of Ukrainian scholars on the content of the concept of "digital competence" are characterized. Practical examples of digital tools and methods that increase the effectiveness of teaching language and literature disciplines in higher education institutions are proposed.

It is concluded that training future specialists to use digital technologies in teaching language and literature disciplines is an important factor in modernizing the system of Ukrainian pre-tertiary and higher education. Systematic training of future teachers makes it possible to form modern digital pedagogical competence, which is a necessary condition for professional growth in the information society. The digital competence of a future specialist includes the ability to work with digital resources and services; the capacity to create and adapt electronic educational materials; skills in organizing online and blended learning; and readiness to use digital tools for assessment, communication, and collaboration.

When using IT in language and literature classes within the New Ukrainian School, it is important to adhere to a number of organizational and pedagogical conditions. Special attention should be paid to the development of students' communicative activity and the formation of a Ukrainian-language personality, particularly among children from families of internally displaced persons. Equally important are the abilities to critically evaluate information from the internet, create a linguistically ecological environment, and promote the enhancement of parents' ICT culture and language literacy. Examples of methods and forms of using IT in the professional training of future teachers are provided.

Keywords: digital technologies, language and literature disciplines, digital competence, vocational education, pre-tertiary education, higher education, higher education institution, pre-tertiary education institution, teacher professional training, information technologies, learners, innovative teaching methods, pedagogical conditions, barrier-free educational environment.

ПІДГОТОВКА МАЙБУТНІХ ФАХІВЦІВ ДО ВИКОРИСТАННЯ ЦИФРОВИХ ТЕХНОЛОГІЙ У ВИКЛАДАННІ ДИСЦИПЛІН МОВНО-ЛІТЕРАТУРНОГО ЦИКЛУ

Анотація. У статті розглянуто особливості підготовки майбутніх фахівців до ефективного використання цифрових технологій у процесі викладання дисциплін мовно-літературного циклу. Проаналізовано роль цифрової компетентності педагогів, визначено виклики та перспективи впровадження освітніх інновацій. Схарактеризовано європейську Рамку цифрової компетентності (DigComp 2.0), погляди українських учених на зміст поняття «цифрова компетентність» тощо. Запропоновано практичні приклади цифрових інструментів і методів, які підвищують результативність навчання дисциплін мовно-літературного циклу в закладах вищої освіти. Зроблено висновок, що підготовка майбутніх фахівців до використання цифрових технологій у викладанні дисциплін мовно-літературного циклу є важливим чинником модернізації системи української передвищої і вищої освіти. Системна підготовка майбутніх педагогів уможливлює формувати в них сучасну цифрову педагогічну компетентність, що є необхідною умовою професійного зростання за умов інформаційного суспільства. Цифрова компетентність майбутнього фахівця охоплює вміння працювати з цифровими ресурсами та сервісами; здатність створювати й адаптувати електронні освітні матеріали; навички організації онлайн- та змішаного навчання; готовність застосовувати цифрові інструменти для оцінювання, комунікації та співпраці. Під час використання ІТ на уроках мовно-літературного циклу в НУШ важливо дотримуватися низки організаційно-педагогічних умов. Особливу увагу варто приділяти розвитку комунікативної активності учнів, формуванню українськомовної особистості, зокрема дітей із сімей внутрішньо переміщених осіб. Важливими є також уміння критично оцінювати інформацію з інтернету, створювати мовноекологічне середовище та сприяти підвищенню ІКТ-культури й мовної грамотності батьків. Наведено приклади методів і форм використання ІТ у професійній підготовці майбутніх учителів.

Ключові слова: цифрові технології, дисципліни мовно-літературного циклу, цифрова компетентність, професійна освіта, передвища освіта, вища освіта, заклад вищої освіти, заклад передвищої освіти, професійна підготовка вчителів, інформаційні технології, здобувачі освіти, інноваційні методи навчання, педагогічні умови, безбар'єрне освітнє середовище.

INTRODUCTION

The problem formulation. The digitalization of higher education today is one of the key directions of its development. Under contemporary challenges – such as the globalization of the educational space, war, the migration of Ukrainian students, the spread of distance learning, and other factors – the effectiveness of professional training of higher education students is determined not only by the amount of knowledge acquired. Equally important are the abilities to navigate rapidly changing information flows, independently acquire new knowledge, regulate one's own activities, and be capable of further professional development.

Therefore, the implementation of computer-oriented education in higher education institutions (HEIs) is intended to ensure the training of competitive and competent specialists who meet global standards, are mobile and flexible, and are ready for continuous professional growth throughout life. The use of interactive technologies (IT) in schools is one of the key tasks of modern education. The Concept of the New Ukrainian School emphasizes that a learner in general secondary education – that is, a future graduate of the NUS – should be not only a well-rounded individual but also capable of innovation (Concept of the New Ukrainian School, 2016).

The introduction of IT into the educational process of the New Ukrainian School makes it possible to effectively achieve these objectives. In particular, digital technologies help ensure high-quality mastery of the Ukrainian language

and contribute to the formation of learners as Ukrainian-speaking individuals, patriots, and active citizens. All of this directly influences the professional training of teachers, which is carried out in pre-tertiary education institutions and higher education institutions.

Analysis of recent research and publications. Various aspects of the professional training of future specialists in higher education institutions through interactive technologies have been the subject of research by Ukrainian scholars (V. Bykov, O. Bihych, V. Bosa, L. Harapko, M. Ikonnikova, T. Kutsenko, S. Kutova, N. Morze, T. Polonska, S. Protska, M. Sidun, N. Telychko, L. Tyshakova, V. Shuliar, and others). Within the scope of our research, particular attention should be paid to the works of V. Bobrytska (Bobrytska, 2015), V. Bosa, O. Ovcharuk (Ovcharuk, 2019), O. Pometun (Pometun, 2004), V. Starosta (Starosta, 2019), S. Tolochko (Tolochko, Bordiug, Knysh, 2020; Tolochko, 2021), and other scholars who analyze the theoretical and methodological aspects of the professional training of higher education students, including philological and pedagogical training. These researchers characterize the leading methodological approaches and conceptual foundations of the problem of forming the professional competence of future specialists through IT, examine the historical aspects of IT development, and explore the essence of the categorical framework (Bandura, 2018; and others), among other issues. At the same time, the problem raised in the title of the article requires further consideration.

THE AIM AND RESEARCH TASKS

The aim of the article is to analyze certain aspects of training future specialists to use digital technologies in teaching language and literature disciplines under contemporary challenges.

RESEARCH METHODS

In the course of the study, theoretical research methods were used, including analysis, synthesis, and generalization of scholarly sources, teaching and methodological literature, and regulatory educational documents. Empirical methods were also applied, namely pedagogical observation of the learning process of education seekers, as well as a survey of teachers, which made it possible to highlight the state of development of the problem in theory and practice.

RESULTS OF THE RESEARCH

As early as the late 1990s, the computerization of education began, laying the foundation for further digitalization and the introduction of innovative technologies into teaching. Despite this, the scholarly literature still lacks a clear and unified conceptual and categorical framework: in pedagogical practice, the terms “innovative technologies”, “interactive technologies”, “information technologies”, “computer technologies”, “computer-supported lesson”, and others are used in parallel (Bandura, 2018). The terms “information technologies” and “computer technologies” are often used as synonyms, although the former is much broader and includes the latter as a component. O. Pometun also draws attention to this issue, emphasizing that the vagueness of definitions leads to the conflation of different concepts – “interactive technologies”, “interactive methods”, and “forms of interactive learning” – as equivalent (Pometun, 2004, p. 20).

As the analysis of the source base has shown (Bandura, 2018; Bobrytska, 2015; Ovcharuk, 2019; Pometun, 2004; Starosta, 2019; Tolochko, Bordiug, Knysh, 2020; Tolochko, 2021; and others), scholars view interactive learning as active interaction among all participants in the educational process, organized with regard to the psychological characteristics of children and based on communication, polylogue, cooperation, and problem-search activities. Researchers distinguish several groups of interactive technologies, which are conventionally divided into four blocks: cooperative learning technologies; cooperative group learning technologies; situational modeling technologies; and technologies for addressing discussion-based issues. Teachers select these technologies according to the lesson topic, the characteristics of the class, and pedagogical conditions.

An analysis of the updated body of sources, as well as the results of a survey of primary school teachers in Ivano-Frankivsk (20 respondents), makes it possible to identify both the advantages and the bottlenecks in the use of interactive technologies in schools (see Table 1) and to take them into account in the process of training future teachers in pre-tertiary and higher education institutions.

Table 1

Advantages and disadvantages of using interactive technologies (IT) in primary school

Advantages	Disadvantages
Development of communica-tive skills	Sanitary and hygienic standards for the use of computer technologies are not always observed
Awareness of participation in teamwork	Individual characteristics are sometimes not taken into account, for example, the educational trajectories of students with special educational needs (SEN)
Development of reflection	Limited number of methods (if a teacher uses only one tool, there is a risk that students will find it more dif-ficult to adapt to others)
Formation of a learner’s sub-ject position in learning	Insufficient teacher preparation for the use of in-teractive technologies

Implementation of coopera-tive learning technology	An adaptation period is required, since most chil-dren enjoy interactive tools, but all children are different; for some, learning through interactive methods may be more difficult than for others. As a result, in the initial days some students may experience internal discomfort, as interactive learning breaks familiar stereotypes about the learning process
Development of communica-tion skills, speech etiquette, interac-tion in small groups	–
Formation of value-oriented group cohesion	–
Acceptance of moral norms and rules of joint activity	–
Evaluation of the process and results of joint activity	–
Increase in the class's cogni-tive activity	–
Development of analysis and self-analysis skills in the process of group work, etc.	–
Availability of ready-made in-structional materials for lessons; in-teractive equipment includes ready-made programs, effects, lessons, and guidelines	–
Development of creative abili-ties	–

An analysis of current sources (Bandura, 2018; Bobrytska, 2015; Ovcharuk, 2019; Pometun, 2004; Starosta, 2019; Tolochko, Bordiug, Knysh, 2020; and others) shows that the necessity of preparing future teachers to implement IT in schools is no longer a matter of debate – it is a requirement of the time. What remains relevant, however, are tasks related to the modernization of these technologies, determining the optimal conditions for their use, and refining the classification of IT, since there is no unified approach to their systematization in Ukrainian pedagogical science. Researcher V. Starosta (Starosta, 2019, p. 235) also emphasizes the significant diversity of IT.

The concept of developing digital competences defines digital competence (DC) as a dynamic combination of knowledge, skills, ways of thinking, and personal qualities that ensure successful socialization and professional activity in the field of digital technologies. Within the European Digital Competence Framework (DigComp 2.0), this concept is associated with confident use of information and communication technologies (ICT) in work, learning, leisure, and civic engagement (DigComp Digital Competence Framework 2.1, 2017). The European Framework for the Digital Competence of Educators highlights several key components. These include professional engagement, which involves using digital tools in teaching and professional development; digital resources, which covers creating, selecting, and sharing digital content; teaching and learning, which focuses on organizing work with digital technologies; assessment, which refers to applying digital strategies to support assessment procedures; empowering learners, meaning the individualization and personalization of the learning process; and facilitating learners' digital competence, which involves developing skills in information management, communication, content creation, and problem-solving. These aspects are discussed in more detail in our separate publication (Bilavych, 2024).

In accordance with the European Digital Competence Framework (DigComp 2.0), professional training of future teachers should focus on developing IT competence in preparation for teaching language and literature disciplines. Scholar S. Tolochko notes that a teacher's digital competence (DC) includes the ability to effectively apply digital technologies for communication, collaboration, professional growth, creation and dissemination of digital resources, management of the learning process, individualized assessment, and ensuring inclusivity. It implies a creative, responsible, and ethical approach to working with information, producing content, and solving educational problems. Digital competence belongs to transversal, universal skills because it combines knowledge, abilities, and metacognitive capacities necessary for addressing real-life situations and supports lifelong learning (Tolochko, 2021; Tolochko, Bordiug, Knysh, 2020).

The scholar emphasizes the challenges faced in the digitalization of vocational education, which requires significant resources and systematic support. Between 2019 and 2023, Ukraine has been implementing the EU and partner countries' program EU4Skills: Better Skills for a Modern Ukraine, aimed at modernizing vocational education, aligning learning outcomes with labor market needs, and enhancing students' opportunities for professional development. The program focuses on improving the quality of the educational process, updating infrastructure, modernizing equipment, and creating Centers of Professional Excellence, which is impossible without the integration of digital technologies. Research on teachers' digital competence conducted by the Ministry of Digital Transformation and EU4Skills revealed insufficient levels of digital skills. In response, training programs were organized: for example, at the end of 2020, over 1,000 instructors participated in 128 online webinars, while 25 educational-methodical centers and 2,700 teachers

from 59 institutions received training on implementing Microsoft Office 365. Additionally, two open online courses were created to enhance the digital competence of teachers and vocational education leaders (Tolochko, 2021, pp. 29–30).

Today, the digitalization of pre-tertiary and higher education institutions is a key condition for their competitiveness in the global educational space. The current trend of uniting university resources and coordinating joint actions contributes to the creation of more accessible, high-quality, and economically efficient education. Global practice demonstrates the relevance and success of educational models that combine traditional learning with digital tools and foster the development of new forms of online education. The main directions of digital modernization include the implementation of partnership pedagogy, optimization of organizational processes, and updating the educational business model. This involves creating online platforms, digitizing materials, using big data to analyze educational demands, constructing individual learning trajectories, remote teamwork, modeling educational situations, testing, and providing remote access to laboratory equipment and research resources. Open educational resources can exist in the form of video lectures, electronic materials, textbooks, tests, and specialized programs. Their "openness" implies not only free access but also the absence of restrictions on their use (Tolochko, 2021, pp. 29–30).

Based on the most common classifications by Ukrainian researchers (Bandura, 2018; Bobrytska, 2015; Ovcharuk, 2019; Pometun, 2004; Starosta, 2019; Tolochko, Bordiug, Knysh, 2020) and the results of a survey of teachers at the St. Basil the Great Catholic School in Ivano-Frankivsk regarding practically applied IT, the types of IT that most effectively support the assimilation of educational material by primary school students were identified. The results showed that the lowest educational outcomes are achieved under conditions of passive learning (reading – 10%), while the highest results are seen with interactive learning, such as working in discussion groups (50%), learning through action (75%), and teaching others or immediate application (90%). These are generalized data; naturally, results may vary in individual cases, but the pattern is evident in the work of every teacher (Bilavych, Ozarko, 2025).

This provides grounds for the conclusion that IT, when combined with classical or traditional teaching, contributes to positive educational outcomes. The variety of IT tools allows teachers to select effective methods tailored to specific topics and to the individual characteristics and knowledge levels of students—in this case, in language and literature subjects.

Using interactive methods enables students to complete more tasks during lessons in Ukrainian language, literary reading, and English in primary school, achieving higher efficiency in mastering the material and developing relevant skills. Moreover, learning activities with IT foster students' motivation to learn and cultivate important social skills, such as teamwork. Group work can also be conducted in pairs, allowing students to collaborate and complete tasks together, exchange ideas, and perform exercises more quickly – tasks that may not always be possible in traditional lessons. Additionally, the mosaic method supports the combination of group and whole-class work, with small groups able to work on different assignments simultaneously.

For language and literature disciplines, which traditionally rely on textual materials and interpretation, IT opens new opportunities for comprehension, creative interaction, and the development of students' critical thinking. In this context, preparing future teachers to use digital tools in their professional activities becomes particularly relevant. The use of digital instruments enhances several aspects of the learning process:

- working with texts and developing language skills is supported by corpus technologies, such as the National Corpus of the Ukrainian Language, which help students analyze linguistic phenomena across large text corpora. Online platforms for editing and checking written work, like Language Tool and the "Dictionaries of Ukraine" (NASU), contribute to the formation of spelling and grammatical competence. These tools are also used for studying word frequency, stylistic features, and contextual analysis. Digital language labs, such as Sketch Engine and AntConc, help higher education students develop text-processing skills;
- studying Ukrainian and foreign literature and analyzing literary texts is facilitated by digital archives and libraries (e.g., E-library "Chytvo", "Diasporiana"), which provide access to rare publications and manuscripts. Visualization services like Canva and Genially assist in creating interactive character maps, timelines, and literary portraits. Virtual literary museums of Ukrainian writers allow for multimedia excursions, museum lessons, library classes, and other interactive activities;
- organizing interactive learning is supported by collaborative platforms like Google Workspace, Padlet, and Miro, which enable collective text analysis;
- services for creating tests, such as Quizizz, Kahoot!, and Classtime, provide opportunities for rapid knowledge assessment of students.

In our view, preparing future specialists to teach language and literature disciplines using digital tools should include not only a theoretical component – such as courses in digital pedagogy, modules on teaching methodology for Ukrainian language and literature in digital environments, and familiarization with regulatory documents on the digitalization of education – but also a practical component. The practical component should cover creating one's own electronic courses in LMS platforms like Moodle, Google Classroom, or Canvas, developing multimedia lectures and digital case studies for language and literature subjects, designing online lessons, conducting microteaching sessions using digital resources, and more. An important aspect is the research component, which involves higher education and pre-higher education students carrying out mini-projects such as creating online dictionaries, test tasks in various formats, interactive dictionaries for correct word stress and normative usage, literary portraits of writers, "passports" of literary works, interactive maps illustrating major stages of writers' lives and activities, as well as their creative connections using Genially. These projects may include video clips, maps, QR codes linking to digitized primary

sources, comparisons of the effectiveness of traditional versus digital text analysis methods, studying the impact of interactive platforms on student performance, analyzing how literary works are perceived in multimedia formats, interactive literary analysis, and learning to work with Padlet using AI, among other activities.

A certain level of experience in using IT for the professional training of future specialists in extracurricular activities has been developed through the work of the University of the Gifted Child (UGC), which has been operating since 2017 at the Vasyl Stefanyk Precarpathian National University under the leadership of prof. H. Bilavych. As part of the "Interesting Holidays" project, each year lecturers and student volunteers create a barrier-free educational platform and a rich developmental environment for younger schoolchildren and adolescents. Under the guidance of lecturers, students conduct master classes in the IT School, School of Language Ecologists, School of Polyglots, Literary Workshop, School of Rhetoric, School of Creative Ideas, and others using IT. Volunteers at UGC understand that, in the context of the Russian-Ukrainian war, children represent the most vulnerable group in Ukrainian society and require support. It is crucial not only to preserve children's lives and protect their rights but also to provide them with a childhood in which they feel safe, healthy, educated, and nationally aware. Creating a barrier-free environment gives students equal opportunities to realize their creative potential and natural abilities, develop a national-linguistic worldview, and cultivate their personalities as "ecologists of the Ukrainian language" and polyglots (for more details see Bilavych, Iliichuk, Maliona, Savchuk, Dovgij, Yaremchuk, 2021). Participation in UGC activities also contributes to the development of both language and digital competencies among students.

CONCLUSIONS AND PROSPECTS OF FURTHER RESEARCH

Training future specialists for the use of digital technologies in teaching language and literature disciplines is an important factor in modernizing the Ukrainian system of pre-higher and higher education. Digital tools not only enhance the effectiveness of the learning process but also contribute to the development of students' creative and critical thinking. Systematic training of future teachers enables the formation of modern digital competence (DC), which is a necessary condition for professional growth in the information society. The digital competence of a future specialist includes the ability to work with digital resources and services, the capacity to create and adapt electronic educational materials, the development of skills for organizing online and blended learning, and the readiness to use digital tools for assessment, communication, and collaboration. When using IT in language and literature lessons in the New Ukrainian School (NUS), it is important to follow a number of organizational and pedagogical conditions. In particular, digital tools should correspond to the didactic objectives of the lesson and meet ergonomic requirements for program materials (readability of text, image quality, etc.). It is essential to consider the age and individual characteristics of children, including students with special educational needs. Maintaining students' motivation, creating a friendly atmosphere for interacting with digital tools, and ensuring an adequate level of the teacher's own digital competence are crucial. Sanitary and hygienic standards regarding the duration of IT use must be observed, and both the advantages and possible limitations of digital tools should be acknowledged. Future teachers should pay special attention to developing students' communicative activity, fostering Ukrainian-language identity, particularly among children from internally displaced families. Equally important are skills in critically evaluating information from the internet, creating a language-ecological environment, and promoting ICT literacy and language proficiency among parents.

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