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## UTILIZING INFORMATION AND COMMUNICATION LEARNING TOOLS TO DEVELOP PROFESSIONAL COMPETENCES IN HIGHER EDUCATION STUDENTS (FOCUSING ON LINGUISTIC AND PEDAGOGICAL DISCIPLINES)

*UTILIZAÇÃO DE FERRAMENTAS DE APRENDIZAGEM DA INFORMAÇÃO E DA COMUNICAÇÃO PARA DESENVOLVER COMPETÊNCIAS PROFISSIONAIS EM ESTUDANTES DO ENSINO SUPERIOR (COM ESPECIAL INCIDÊNCIA NAS DISCIPLINAS LINGÜÍSTICAS E PEDAGÓGICAS)*

*UTILIZACIÓN DE HERRAMIENTAS DE APRENDIZAJE DE LA INFORMACIÓN Y LA COMUNICACIÓN PARA DESARROLLAR LAS COMPETENCIAS PROFESIONALES DE LOS ESTUDIANTES DE ENSEÑANZA SUPERIOR (CENTRÁNDOSE EN LAS DISCIPLINAS LINGÜÍSTICAS Y PEDAGÓGICAS)*

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**ABSTRACT:** In the context of globalisation, digitalisation and modernisation of education, the use of information and communication technologies (ICT) in the educational process is becoming a critical factor in developing the professional competences of higher education students. This article investigates the effectiveness of information and communication tools in developing professional competences for future teachers and philologists. The methods of the study were a survey of higher education students, teachers and heads of structural units, and an experimental

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study based on the comparison of indicators of the levels of use of information and communication teaching aids. The study results demonstrate that the systematic use of ICTs ensures the adaptation of students to the modern challenges of professional activity.

**KEYWORDS:** Information and Communication Training. Teaching Aids. Competences. Specialists (Students). HEIs.

**RESUMO:** No contexto da globalização, digitalização e modernização da educação, o uso das tecnologias de informação e comunicação (TIC) no processo educacional está se tornando um fator crítico no desenvolvimento das competências profissionais de estudantes do ensino superior. Este artigo investiga a eficácia das ferramentas de informação e comunicação no desenvolvimento de competências profissionais para futuros professores e filólogos. Os métodos do estudo foram uma pesquisa com estudantes do ensino superior, professores e chefes de unidades estruturais e um estudo experimental baseado na comparação de indicadores dos níveis de uso de materiais didáticos de informação e comunicação. Os resultados do estudo demonstram que o uso sistemático das TICs garante a adaptação dos alunos aos desafios modernos da atividade profissional.

**PALAVRAS-CHAVE:** Treinamento em Informação e Comunicação. Materiais Didáticos. Competências. Especialistas (Estudantes). IES.

**RESUMEN:** No contexto da globalização, da digitalização e da modernização da educação, a utilização das tecnologias da informação e da comunicação (TIC) no processo educativo está a tornar-se um factor crítico no desenvolvimento das competências profissionais dos estudantes do ensino superior. Este artigo investiga a eficácia das ferramentas de informação e comunicação no desenvolvimento de competências profissionais para futuros professores e filólogos. Os métodos do estudo foram um inquérito realizado a estudantes do ensino superior, docentes e responsáveis de unidades estruturais, e um estudo experimental baseado na comparação de indicadores dos níveis de utilização de materiais didáticos de informação e comunicação. Os resultados do estudo demonstram que a utilização sistemática das TIC garante a adaptação dos estudantes aos desafios modernos da actividade profissional.

**PALABRAS CLAVE:** Formação em Informação e Comunicação. Auxiliares de Ensino. Competências. Digitalização da Educação. Especialistas (Estudantes). IES.

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## INTRODUCTION

The modern system of higher education, in the context of globalisation and digitalisation, places new demands on the training of specialists, especially in fields such as pedagogy and philology. The formation of students' professional competence depends not only on traditional teaching methods but also on integrating information and communication technologies (ICT) into the educational process. These tools create an innovative environment that fosters the development of students' creativity, intercultural communication skills, and critical thinking. The use of ICT in student training is becoming increasingly important due to global trends in the digitalisation of education and professional activities. It helps students adapt to modern technological challenges and develop skills for searching, analysing, and critically understanding information.

Modern education requires the implementation of updated teaching methods focused on interactivity, personalisation, and adaptability. ICT creates new opportunities for active learning through simulations, online courses, and gamification technologies. ICT also contributes to the development of general competences such as critical thinking, information processing, and communication skills. Introducing ICT into the educational process enables students to align with employers' expectations and equips them with the ability to solve complex problems in their professional activities. The relevance of ICT use lies in its advantages for developing practical skills and competences, particularly: fostering self-study and self-monitoring abilities, increasing motivation to learn through interactivity, and enabling personalised learning tailored to students' levels of preparation.

This study focuses on assessing the impact of ICT on developing professional competences among higher education students, particularly those specialising in linguistic and pedagogical fields.

## Literature Review

The use of ICT in training philologists and teachers is a key factor in developing professional competencies. Recent research highlights the importance of integrating ICT into the educational process to enhance teaching effectiveness and prepare specialists for work in digital environments (Batsurovska et al., 2024). The use of ICT promotes skills in searching, analysing, and critically evaluating information—essential competencies for modern professionals (Castaño-Muñoz, 2021). Specifically, electronic educational resources and online libraries allow students to broaden their knowledge and strengthen their research abilities (Dotsenko et al., 2023).

The creation of improved curricula that meet the evolving needs of the industry should rely on ICT competence frameworks, which are regularly updated. This study analyses various

international ICT competence frameworks to guide the development of relevant curricula (Harmse & Wadee, 2020). Developing ICT for education is vital to ensure that digital transformation aligns with national education policies and the Global Sustainable Development Goals (Aung & Kham, 2023).

ICT enables the introduction of interactive methods such as virtual tours, online discussions, and multimedia presentations, which enhance student motivation and improve learning outcomes (Guo & Feng, 2021). ICT also allows simulations of real professional scenarios, fostering the use of modern technologies in teaching and research—skills essential for future teachers and linguists (Li et al., 2021).

It is emphasised that traditional approaches to professional training in higher education are insufficient without incorporating digital technologies to build future specialists' information competences (Shcherbiak et al., 2023). This paper also explores the role of ICT cluster components as integral units in competence formation and suggests methods for their application (Mazurenok & Korolyuk, 2021). The quality of education is directly linked to teaching quality, particularly methodological and didactic competence. Furthermore, developing the population's digital literacy depends significantly on teachers' methodological competence (Biloshchytskyi et al., 2020).

In Ukraine's regulatory framework, lists of competences are defined by higher education standards. However, discrepancies remain between the critical competences outlined in Ukraine and those in the EU, making it necessary to harmonise national legislation with European law in the context of European integration (Shevchenko et al., 2023). Recent advances in national digitalisation efforts have been considered. Classical approaches to professional development are analysed, and an alternative method for effectively building digital competences is proposed (Zagirnyak et al., 2020). Self-assessment and peer assessment using ICT are valuable activities for improving oral communication competence and should be incorporated into didactic strategies to enhance each component (Sánchez-Trujillo et al., 2023).

Despite its numerous advantages, integrating ICT into education faces challenges such as the need to improve digital literacy among teachers and students, provide technical support, and ensure access to modern technologies (Maaß et al., 2024). Nevertheless, given the rapid advancement of digital tools, integrating ICT into the training of philologists and teachers represents a promising path for preparing competitive specialists.

## **METHODOLOGY**

1. Analysis of literary sources on the use of information and communication tools for developing the professional competences of higher education students;

2. Survey of higher education students, teachers, and heads of structural units on the use of information and communication tools to support the formation of students' professional competences;
3. An experimental study comparing indicators of the use of information and communication teaching aids, based on established criteria, to determine the level of professional competence development among higher education students in philological and pedagogical specialities.

## RESULTS

This study examines the use of information and communication tools in developing the professional competences of higher education students, focusing on linguistic and pedagogical specialities—specifically, the bachelor's degree in speciality 035 "Philology" and the master's degree in speciality 011 "Educational and Pedagogical Sciences," within the "General Pedagogy" programme.

E-learning platforms such as Moodle, Google Classroom, and Edmodo provide access to course materials and facilitate tests and interactive classes. Online course platforms like Coursera and Prometheus offer specialised programmes for teachers and linguists. Communication tools such as Zoom, Microsoft Teams, Skype, forums, and chats are used to conduct online lectures, seminars, and webinars, enabling effective exchange of ideas between students and teachers.

Applications like Duolingo, Babbel, and Memrise, along with translation and text analysis tools such as Google Translate, Linguee, Reverso Context, Sketch Engine, and the Ukrainian National Corpus, are employed for linguistic research. Multimedia tools—including YouTube tutorials, TED Talks, podcasts, interactive presentations, Prezi, and Canva—offer visualisation, audio support, and varied educational content. Tools for creating interactive learning materials, such as Kahoot!, Quizlet, and Mentimeter, facilitate knowledge building, skills development, and provide immediate feedback.

The use of information and communication tools offers advantages such as personalised learning, development of critical thinking, and enhanced interactivity. Students can progress at their own pace, while digital resources encourage analytical skills and improve engagement through interactive activities. It is also essential to emphasise the need for teachers to continuously develop their skills in using modern platforms and technologies.

Combining ICT with traditional teaching methods and multimedia content creation ensures students are prepared for the digitalisation of education. Within this study, four key criteria were defined for using ICT in developing professional competences: relevance and

goal orientation, interactivity and engagement, practical application, and accessibility with technological feasibility.

A survey was conducted with 98 participants from the “Philology” programme at Uzhhorod National University and 52 participants from “General Pedagogy” at Drohobych Ivan Franko State Pedagogical University to assess the effectiveness of information and communication tools in teaching. Respondents were asked to evaluate the overall formation of professional competences based on specific criteria for each curriculum discipline.

Three quality levels were identified to evaluate teaching aids used in developing students’ professional competences through traditional methods and ICT: The Basic Level (BL) focuses on meeting minimum requirements, providing access to essential learning materials (texts, presentations, tests) and interactive tools (forums, chats); The Intermediate Level (IL) aims to integrate learning tools into the educational process to strengthen professional competences. It supports multilingualism and interactivity (tasks tailored to students’ levels) and enables collaborative work on projects (real-time document editors, group assignments); The High Level (HL) involves advanced technologies that integrate theory and practice in professional training. It includes artificial intelligence for personalized learning (performance analytics, automated recommendations) and virtual/augmented reality (VR/AR) for simulating real-life scenarios. It also offers integration with digital ecosystems (university management systems, professional databases, scientific libraries) and the use of language corpora and specialized software for linguistic research.

It is crucial to define the assessment criteria and their indicators. The first criterion, relevance and purposefulness (KP1), establishes a clear connection to educational goals and supports the development of specific professional competences. Its indicators include the alignment of ICT with the educational programme and its focus on addressing professional challenges.

The second criterion, interactivity and engagement (KP2), reflects how ICT tools contribute to students’ active participation in the learning process through interactive tasks, group work, or simulations. Its indicators are the level of student interactivity and engagement, as well as the frequency of communication tool usage (chats, forums).

The third criterion, practical orientation (KP3), focuses on providing students with practical skills applicable to their professional activities through ICT. Its indicators include the alignment of ICT with professional standards and the number of practical tasks completed using ICT.

The fourth criterion, accessibility and technological feasibility (KP4), evaluates the suitability of ICT tools for students with varying levels of digital literacy and how these tools support their development. Key indicators are the availability of technical support and the level of technological proficiency demonstrated by students.

These criteria ensure the effective integration of ICT in developing professional competences and provide a foundation for students’ professional growth.



The experimental work compared the outcomes of traditional teaching methods used in the educational programme with those of combined methods incorporating ICT. When analysing the study results, the average score for each criterion was calculated based on the established levels. Tables 1 and 2 include the following conventions: KP1, KP2, KP3, and KP4 represent the criteria for assessing the quality of teaching aid utilisation; BL, IL, and HL denote the basic, intermediate, and high levels of teaching aid application in forming professional competences.

**Table 1.** Assessment of the formation of professional competences for higher education students majoring in 035 "Philology"

Criterion/Level	BL	IL	HL	Average	BL	IL	HL	Average
KP1	29.25	56.42	74.16	53.28	32.28	64.18	91.26	62.57
KP2	27.84	58.68	72.52	53.01	31.16	65.82	88.26	61.75
KP3	21.84	54.71	70.52	49.02	31.62	61.12	87.52	60.09
KP4	27.52	51.62	69.92	49.69	30.92	62.32	89.82	61.02
Average	26.61	55.36	71.78	51.25	31.50	63.36	89.22	61.36

Source: developed by the author.

**Table 2.** Assessment of the formation of professional competences for higher education students majoring in 011 "General Pedagogy"

Criterion/Level	BL	IL	HL	Average	BL	IL	HL	Average
KP1	21.78	48.12	68.44	46.11	32.71	63.72	93.72	63.38
KP2	29.81	48.62	71.82	50.08	30.81	64.84	96.21	63.95
KP3	21.82	46.28	72.43	46.84	29.92	62.81	88.14	60.29
KP4	26.92	49.12	74.82	50.29	30.71	60.75	87.12	59.53
Average	25.08	48.04	71.88	48.33	31.04	63.03	91.30	61.79

Source: developed by the author.

As can be seen from Tables 1 and 2, the effectiveness of using teaching aids (traditional and their combination with ICT) to develop the professional competences of higher education students majoring in Philology and General Pedagogy by the criteria outlined above increases after the introduction of ICT.

## DISCUSSION

ICT is becoming an integral part of the educational process, particularly in the training of philologists and teachers, where future professionals are expected to demonstrate a high level

of language proficiency, cultural literacy, and pedagogical skills (Manca, 2020). Students using electronic platforms (Google Classroom, Moodle), language corpora, or software for creating teaching materials develop ICT skills—an essential component of their professional competence (Xu et al., 2021).

For future philologists, ICT provides access to electronic dictionaries, translators, linguistic software, and scientific databases, enabling high-quality research. For higher education students in pedagogical fields, ICT supports the mastery of modern teaching and assessment methods based on digital technologies. Integrating theory and practice allows learning situations to be modelled through interactive simulations and enables the application of linguistic knowledge in text creation, translation, and analysis.

Applications such as Duolingo and Rosetta Stone support the creation of individualised learning paths. Automatic translation tools (Reverso, DeepL) and text analysis software are useful for studying grammar, semantics, and stylistics (Mebert, 2020). Several approaches can expand training opportunities for higher education students in philology, such as integrating text analysis and translation platforms into the curriculum, organising online discussions with native speakers via Zoom and Skype, and using corpora for linguistic analysis practice (Seddighi et al., 2023).

In teacher training, VR tools (ClassVR) simulate classroom environments, helping future teachers practice classroom management skills. Platforms like Kahoot! and Quizlet, along with interactive whiteboards (Jamboard, Miro), support the acquisition of methods for engaging students. Creating virtual pedagogical laboratories and using gamified assessment platforms, webinars, and video conferences with practising teachers represent promising directions for enhancing ICT in pedagogical training.

However, challenges remain in implementing ICT, such as technical limitations, insufficient teacher training, and issues with student engagement (Kuzmina et al., 2020). To ensure a balanced educational process, it is essential to provide equal access to modern ICT for all students and establish strategies to support effective ICT use by teachers. This requires continuous improvement of the digital infrastructure in educational institutions and regular training for teachers and students on ICT use. Integrating advanced technologies (VR, AR, artificial intelligence) into the learning process and expanding access to digital resources, including language corpora and linguistic research platforms, are promising steps toward developing professional competencies through ICT.

## FINAL CONSIDERATIONS

ICT enables the creation of innovative learning environments that enhance the acquisition of theoretical knowledge and its practical application. This includes developing language



skills, exploring linguistic structures through digital resources, and designing teaching methods in interactive formats. Multimedia technologies (webinars, video lessons, interactive tasks) increase students' motivation to learn, while interactive teaching approaches serve as a model for future educators.

This article evaluates the formation of professional competences among higher education students majoring in 35 "Philology" and 11 "General Pedagogy." It demonstrates the effectiveness of using ICT to develop these competences. Information and communication teaching tools are essential for fostering professional skills, promoting creative thinking, and preparing students to work effectively in today's information-driven society. Their widespread implementation is a key requirement for training highly qualified specialists.

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