

Тігор Олексій Олександрович
Кухарчук Галина Вікторівна

The Role of Information and Communication Technologies in Developing Professional English Competence of Future IT Specialists

Вінницький національний технічний університет

Анотація

Науковий інтерес присвячено дослідженню ролі інформаційно-комунікаційних технологій у формуванні професійної англомовної компетентності майбутніх фахівців у галузі інформаційних технологій. Узагальнено вплив цифрових освітніх платформ, онлайн-ресурсів, хмарних сервісів та засобів дистанційної комунікації на розвиток мовних і професійних навичок студентів. Особлива увага зосереджується на значенні англійської мови для спеціальних цілей, як основного мовного інструменту міжнародної професійної взаємодії в IT-сфері.

Ключові слова: інформаційно-комунікаційні технології, професійна англійська мова, IT-фахівці, міжкультурна комунікація, цифрове навчання.

Abstracts

The scientific focus is on investigating the role of information and communication technologies in the development of professional English competence of future specialists in the field of information technology. The influence of digital learning platforms, online resources, cloud services, and remote communication tools on the development of students' language and professional skills is summarized. Special attention is given to the importance of English for Specific Purposes as the main linguistic tool for international professional interaction in the IT field.

Keywords: information and communication technologies, professional English, IT specialists, intercultural communication, digital learning.

Introduction

Information and communication technologies are becoming increasingly integrated into all spheres of contemporary life and are shaping new requirements for the professional training of future specialists, particularly in the field of information technology. In the context of globalization, English has become the principal instrument for knowledge exchange, professional interaction, and the development of innovation, as the majority of technical documentation, international software products, standards, and technology descriptions are produced in English [1]. Competency in professional English is therefore of decisive importance for students who aspire to join the global IT community, work in multinational teams, participate in projects with international scope, and compete successfully in the global labor market [1].

Professional English in IT constitutes a complex set of skills encompassing the comprehension and use of specialized terminology, the analysis and production of technical documentation, the reading of English-language specifications and standards, as well as the ability to conduct oral and written communication in a professional environment [5]. With the emergence of flexible, remote, and distributed forms of work, the capacity to collaborate effectively in English has become not merely desirable but an essential component of technical education.

Moreover, the modern IT industry is inherently transnational. Cooperation with clients, partners, and teams from different countries requires adaptation to cultural diversity, an understanding of communication ethics, interaction norms, and tolerance. Consequently, the integration of ICT into the educational process enables students not only to acquire technical and linguistic competences but also to gain experience in authentic interaction within virtual international communities [2; 3]. As a result, the training of future IT specialists becomes more practice-oriented, competitive, and aligned with the demands of the global market.

Research results

The empirical foundation of the study was a pedagogical experiment aimed at determining the effectiveness of using information and communication technologies in the formation of professional English competence among future specialists in the field of information technology. The research was implemented within the framework of international academic cooperation, coordinated with the participation of a Canadian university students who provided organizational and methodological support for the digital component of the experiment. The sample included students from technical universities in Ukraine and the United States, which made it possible to conduct a comparative analysis of the impact of ICT in different linguistic and educational contexts.

A total of 120 IT students participated in the experiment (60 from each country). The participants were divided into control groups, whose instruction followed a traditional model, and experimental groups, in which the educational process was based on the systematic use of digital learning platforms (Coursera, Udemy), cloud services, professional development environments (GitHub), video conferencing tools (Zoom, Microsoft Teams), and international online projects [2; 3]. The duration of the experiment was ten weeks. The level of professional English competence was assessed according to three criteria: mastery of professional terminology, the ability to work with technical documentation, and the development of professional oral and written communication skills. A comparative analysis of the initial and final results made it possible to determine the dynamics of language development and to establish the effectiveness of ICT integration in the professional training of future IT specialists.

The findings of the experiment demonstrated that the use of information and communication technologies has a significant impact on the development of professional English competence among IT students in both Ukraine and the United States. The application of digital educational platforms, online courses, video lectures, internet resources, and collaborative tools enabled participants in the experimental groups to substantially expand their vocabulary, master professional terminology, and confidently work with technical documentation in English [2]. Students not only improved their comprehension of texts and specifications but also learned to apply their knowledge effectively in preparing their own working materials and project reports.

An important component of the experiment was the active use of digital communication tools, including video conferences, GitHub, Discord, and professional forums, which contributed to the development of virtual collaboration skills. The data obtained indicate that students in the experimental groups improved their performance by an average of 57% in Ukraine and 44% in the United States, compared to only 17% and 13% in the traditional groups, respectively. This difference confirms that ICT creates significantly more favorable conditions for language practice, particularly in countries where English is not the language of everyday communication. Participation in joint online projects with representatives of different countries allowed students to gain authentic experience of international interaction and to develop intercultural competence [4].

The study also demonstrated that the integration of ICT into the educational process enables students to regulate their learning pace independently, deepen their engagement with professional disciplines, and accelerate the acquisition of the language of professional communication. This contributes simultaneously to the development of linguistic and professional skills necessary for successful employment in the international arena. ICT fosters cognitive flexibility, critical information analysis, and the ability to adapt effectively to new technological requirements and standards. Thus, the research confirmed that ICT is an effective instrument for developing professional English competence in future IT specialists [1; 5].

Conclusion

First, the results obtained confirm that information and communication technologies play a key role in the development of professional English competence among future IT specialists, regardless of the country of study. The use of digital educational platforms, online courses, video lectures, and interactive tools creates favorable conditions for mastering professional vocabulary, processing technical texts, and preparing documentation in English. Participation in video conferences, online projects, professional chats, and forums contributes to the formation of distance collaboration skills and intercultural communication competence, which constitute an essential component of professional activity within the global IT economy.

Second, the integration of ICT enables students to regulate the pace of information acquisition, engage more deeply with professional disciplines, prepare for emerging technological requirements and professional communication, enhance their competitiveness in the global labor market, and demonstrate readiness for real-life professional situations in the international professional environment.

СПИСОК ВИКОРИСТАНОЇ ЛІТЕРАТУРИ

1. Редько С. П., Кулаженко О. П., Овчарова О. В., Савчук Т. Л. *Роль англійської мови у професійному розвитку IT-фахівців в Україні: вплив мовних навичок на кар'єрне зростання та міжнародну інтеграцію*. Закарпатські філологічні студії, 2024.
2. Zaki L. B., Raj Kaur B. J. *Analyzing the Needs of ICT-Integrated English Language Teaching for EFL Learners*. IALLTEACH Journal, 2025
3. Kusrini E., Wardani N. A., Sotlikova R. *Challenges and Opportunities: EFL Teachers' Teaching Experiences with ICT-Enhanced Professional Development in Higher Education*. JOLLT Journal of Languages and Language Teaching, 2025.
4. Martínez-Soto T., Prendes-Espinosa P. *A Systematic Review on the Role of ICT and CLIL in Compulsory Education*. Educ. Sci., 2023.
5. Ivanyshyn N. L. *Professional foreign language training (English for Specific Purposes) in higher education: historical and contemporary aspects*. Науковий вісник Сіверщини: Освіта. Соціальні та поведінкові науки, 2024.

Тігор Олексій Олександрович – студент групи 1KI-24б, Вінницький національний технічний університет, м. Вінниця, Хмельницьке шосе, 95, e-mail: alexigor007@gmail.com.

Tihor Oleksii Oleksandrovych – student of group 1KI-24b, Vinnytsia National Technical University, Vinnytsia, Khmelnytske Shose 95, e-mail: alexigor007@gmail.com.

Науковий керівник: **Кухарчук Галина Вікторівна** — викладач кафедри іноземних мов, Вінницький національний технічний університет, м. Вінниця, e-mail: galinaku07@gmail.com.

Supervisor: **Kukharchuk Halyna Viktorivna** – an Assistant Professor of Foreign Languages Department, Vinnytsia National Technical University, Vinnytsia, e-mail: galinaku07@gmail.com.