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ENHANCING FUTURE TEACHERS' COMMUNICATIVE COMPETENCE BY INTEGRATING MODERN TECHNOLOGIES INTO 'ENGLISH FOR ACADEMIC PURPOSES' COURSES

РОЗВИТОК КОМУНІКАТИВНОЇ КОМПЕТЕНТНОСТІ МАЙБУТНІХ УЧИТЕЛІВ
ЗАСОБОМ ІНТЕГРАЦІЇ СУЧАСНИХ ТЕХНОЛОГІЙ У КУРС
«АНГЛІЙСЬКА МОВА ДЛЯ АКАДЕМІЧНИХ ЦІЛЕЙ»

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Iryna PINCHUK¹, Olha MILIUTINA², & Olena CHAIKA³



¹Doctor of Science (Education), Ph.D. in Education, Full Professor, Department of Primary Education Pedagogy and Psychology, Educational and Scientific Institute of Pedagogy and Psychology, Oleksandr Dovzhenko Hlukhiv National Pedagogical University, Hlukhiv, Ukraine.


✉ E-Mail: pinchuk@gnpu.edu.ua

 <https://orcid.org/0000-0002-1376-3977>



² Ph.D. in Education, Assistant Professor, Department of Foreign Languages and Teaching Methodology, Oleksandr Dovzhenko Hlukhiv National Pedagogical University, Hlukhiv, Ukraine.

✉ E-Mail: mylutina@ukr.net

 <https://orcid.org/0000-0002-8894-2216>



³ Ph.D. in Education, Assistant Professor, Department of Foreign Languages and Teaching Methodology, Oleksandr Dovzhenko Hlukhiv National Pedagogical University, Hlukhiv, Ukraine.

✉ E-Mail: chaika@gnpu.edu.ua

 <https://orcid.org/0000-0002-3650-3991>

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ABSTRACT

Purpose. This paper addresses the challenges of modern Ukrainian education in relation to the teaching of English for Academic Purposes, which focuses on developing language skills for future professional activities. This paper presents the results of a study investigating the pros and cons of using modern technologies to enhance the professional communicative competence of future teachers in higher education establishments in Ukraine. The article explores ways to improve the English-speaking communicative competence of future teachers using modern technologies.

Methodology. To achieve our goal, we set out some objectives and carried out the research step by step. Firstly, we reviewed the scientific literature on the subject. Then, using the method of expert evaluation, we determined the key modern technologies for improving the English-speaking communicative competence of future teachers. Next, we conducted a pedagogical experiment to identify the most significant modern technologies for developing the English-speaking communication skills of students at a pedagogical university.

Results. The results showed that the most effective methods were mobile-assisted learning (MAL), ChatGPT, and generative artificial intelligence (AI), and automated writing evaluation (AWE). Each of these methods influences language skills differently in undergraduates. Writing and reading were the most influenced. Listening and speaking skills improved less after the pedagogical experiment.

Conclusions. The study conducted allows us to conclude that the aforementioned modern technologies could enhance undergraduates' communicative competence in the English language while studying at educational institutions. They are a powerful means of developing not only language skills, but also critical thinking, academic writing, and argumentation. However, the results also show that there are some disadvantages and ethical complications to using modern technologies, including plagiarism, authorship, and

Мета. У статті розглядається проблема викладання англійської мови для академічних цілей у сучасній українській вищій освіті, що зосереджена на розвитку всіх видів мовленнєвої діяльності майбутніх учителів. У роботі представлені результати дослідження щодо переваг та недоліків використання сучасних технологій для вдосконалення професійної комунікативної компетентності майбутніх учителів у закладах вищої освіти України. У статті досліджуються шляхи покращення англомовної комунікативної компетентності майбутніх учителів за допомогою сучасних технологій.

Методологія. Для досягнення мети було поставлено завдання та проведено крок за кроком дослідження. Спочатку було вивчено наукову літературу з теми дослідження. Потім, використовуючи метод експертної оцінки, було визначено ключові сучасні технології для покращення англомовної комунікативної компетентності майбутніх учителів. Далі було проведено педагогічний експеримент для визначення найбільш значущих сучасних технологій для розвитку англомовних комунікативних навичок студентів педагогічного університету.

Результати. Результати показали, що найефективнішими методами були мобільне навчання, ChatGPT та генеративний штучний інтелект, а також автоматизована оцінка письма. Кожен із цих методів по-різному впливає на мовленнєві навички студентів. Найбільший вплив зазнали письмо та читання. Навички аудіювання та говоріння покращилися менше після педагогічного експерименту.

Висновки. Проведене дослідження дає змогу дійти висновку, що вищезгадані сучасні технології можуть покращити англомовну комунікативну компетентність студентів під час навчання в закладах вищої освіти. Вони є потужним засобом розвитку не лише видів мовленнєвої діяльності, а й критичного мислення, академічного письма та аргументації. Однак результати також показують, що існують деякі недоліки та етичні ускладнення використання сучасних технологій, включаючи проблеми плагіату,

transparency issues. Therefore, lecturers' supervision is necessary, and teachers should use modern technologies properly.

Keywords: *English language communicative competence, language skills, modern technologies, teaching English for academic purposes, undergraduates.*

авторства та прозорості. Тому необхідним є керівництво викладачів, і викладачі мають коректно використовувати сучасні технології.

Ключові слова: *англомовна комунікативна компетентність, види мовленнєвої діяльності, сучасні технології, викладання англійської мови для академічних цілей, студенти.*

INTRODUCTION

By the twenty-first century, English had been adopted by many courses and branches of science and was considered the universal language of the academic, research, and professional worlds. Among the language theories that have emerged stronger than ever before is second language acquisition, which aims to equip learners with the linguistic and higher cognitive skills required to negotiate various academic situations. Consequently, teaching English for Academic Purposes (EAP) focuses on developing high-level language skills, such as grammar and vocabulary, as well as other higher-order skills, such as critical reading, academic writing, and argumentation. These skills are also indispensable for participating in scholarly discourse.

The study (Liu et al., 2024) emphasised the importance of improving conceptual precision to enhance understanding of teacher innovation. Additionally, the scientists emphasise the necessity for methodological advancements that strengthen the rigour of empirical investigations. Furthermore, they advocate theory-driven research to deepen insights into the underlying mechanisms of teacher innovation processes, emphasising the importance of acknowledging both positive outcomes and the possible drawbacks of teacher innovation (Liu et al., 2024; Teng et al., 2024).

In our previous research (Chaika et al., 2024), we confirmed the positive impact of the communicative teaching method on the professional development of English language and literature teachers. This was evidenced by an increased level of foreign language competence among these teachers. There was also an increase in future teachers' motivation to study specialised courses and an improvement in their understanding of the prospects for further professional development. They also demonstrated a readiness to use the acquired competencies in real-life situations and achieved success in communicating in English-speaking spaces.

In the article, the authors (Liubashenko & Kornieva, 2019) examine the outcomes of research into the assessment of dialogic interactive skills in Technical English teaching for tertiary school students. They propose the implementation of dialogic collaborative interaction as a teaching method and an assessment tool. The results of the research confirm that collaborative dialogue has a positive effect on students' communicative competence and their acquisition of skills such as perceiving, understanding, and decoding the content of oral texts; identifying the communicative purpose of interlocutors' utterances by analysing verbal and non-verbal cues; and defining and aligning the style and genre of utterances with stylistic registers in English.

The paper by the Ukrainian scientists (Mykytenko et al., 2022) focuses on developing intercultural communicative competence as an integral part of students' vocational training. The research results indicated that students who focused more on practical training than theoretical knowledge showed better learning outcomes. Methodological guidelines for ESP teachers have been developed.

The results of the analysis make it possible to determine that the research (Nguyen et al., 2021) examines how teacher autonomy in the classroom and school culture influence collective teacher innovativeness through integrated professional learning. It suggests that a collaborative culture would encourage teachers to participate in such activities and that collective participation would enhance their innovativeness. A meta-analysis of forty studies conducted between 2013 and 2021 shows that students who receive AWE feedback consistently improve their early-to-final drafts, particularly with regard to grammar and vocabulary usage (Karatay & Karatay, 2024).

The study (Zeng & Takatsuka, 2009) examines the dialogue of English as a Foreign Language learners in synchronous, task-based, computer-mediated communication. It focuses on whether learners engage with each other in text-based dialogue about language use in order to achieve the task goal, and on how this mutual engagement affects their language learning in the context of computer-mediated communication. The findings revealed that learners did assist each other in paying attention to language forms through collaborative dialogue, consequently enhancing their language learning.

Fast technological progress has paved the way for a reinvention of EAP instruction. Today, a variety of resources, ranging from mobile-assisted language learning applications to automated writing evaluation systems and generative artificial intelligence (AI) platforms such as ChatGPT, facilitate highly personalised, flexible, and interactive learning experiences. This has started to redefine the roles of teachers and learners in twenty-first-century classrooms, creating new pedagogical opportunities, but also raising ethical, motivational, and autonomy-related challenges (Shi et al., 2025; Du & Alm, 2024).

Recent research highlights that, while digital tools have the potential to improve academic literacy and engagement among students, their effectiveness depends heavily on how they are integrated into curriculum design. For example, focusing on forms using mobile technology significantly improves academic vocabulary acquisition (Xodabande & Boroughani, 2023). Similarly, Automated Writing Evaluation (AWE) systems such as Grammarly provide immediate, formative feedback on the quality of writing, promoting iterative skill development and accuracy (Karatay & Karatay, 2024). More recently, ChatGPT has emerged as a promising conversational agent for providing feedback and facilitating practice, although concerns remain about overreliance and reduced creativity (Shi et al., 2025; Du & Alm, 2024).

There is a great number of scientific sources on using mobile technologies with the aim of improving the level of graduates' English (Bernacki et al., 2019; Fu & Hwang, 2018; Melnychyk et al., 2024; Pashko & Pinchuk, 2024). The study of Ukrainian scientists (Knysh et al., 2023) demonstrates that the modernizing higher education by implementing innovative educational technologies can improve the efficiency of the educational process and prepare students for today's challenges.

The findings of the scientists from New Zealand (Du & Alm, 2024) provided practical recommendations for educators seeking to effectively integrate generative AI tools into language education. This study examined English language students' perceptions of using generative AI as a supportive tool for English for Academic Purposes in a university context. Using self-determination theory as an explanatory framework, the study examined how ChatGPT impacted students' basic psychological needs for autonomy, competence, and relatedness in their language-learning experience.

The findings suggested that ChatGPT has the potential to support students' need for autonomy by providing flexibility and personalised feedback, and to support their need for competence by providing a safe space for practice. However, its impact on the need for relatedness was mixed: some students experienced a sense of companionship, while others expressed concerns about reduced human interaction. While students acknowledged the benefits of ChatGPT, they also emphasised the importance of human-teacher interaction and empathy.

The team of scientists (Rakhmanina et al., 2022) emphasised the importance of cross-cutting knowledge and skills that can be applied in practice at the current stage of education. They determined that the spread of useful knowledge created the need for STEM technologies and that a combination of natural sciences, technology, engineering, and humanities is important in modern, rapidly developing society. This is why analysing the development of modern society, especially the latest information technologies, shows the popularisation of science and technology, particularly educational robotics, which is appropriate at all levels of education. The article describes the use of robotics elements in primary school, which allows the educational process to be diversified through the introduction of games and practical activities.

This article examines the issue of teaching English for academic purposes, focusing on developing the English language skills of trainee teachers. It **aims** to explore the current situation, the pros and cons of using modern technologies to improve the professional English communication skills of future teachers in higher education institutions in Ukraine, and how modern technologies can be used to enhance these skills. This article explores the intersection of technology and English for academic purposes, analyzing recent studies to provide insights into how modern tools can enhance academic English learning while addressing their benefits, limitations, and implications for higher education.

METHODOLOGY

Participants

The empirical study was conducted at Oleksandr Dovzhenko Hlukhiv National Pedagogical University and included 74 students from the Educational and Scientific Institute of Pedagogy and Psychology and the Educational and Scientific Institute of Philology and History, at master's degree level. Six experienced lecturers, who are assistant professors (one of them is a professor) and have taught English for over ten years, took part in the process of expert assessment.

Procedure

The first stage of the study involved preparing materials and organising a pedagogical experiment. During this period, an analysis of the scientific literature on the research problem was conducted, the programme for the pedagogical experiment was developed, and diagnostic tools (questionnaires, tests, and plans for recording results) were selected and constructed. Using the expert assessment method, three main contemporary teaching methods for developing students' English-language communicative competence in higher education institutions were identified. We'll describe them in the next section.

The main purpose of the expert assessment was to provide an objective evaluation of the extent to which modern technologies contribute to the development of future teachers' communicative competence in English for Academic Purposes (EAP) courses.

This was achieved by analysing students' oral presentations, written assignments, project work, online discussions, and classroom participation. Experts also reviewed samples of students' academic writing and observed communicative activities performed during technology-enhanced learning sessions. In some cases, standardised evaluation rubrics and scoring scales were employed to ensure the consistency and comparability of the results.

The expert assessment method also validated the findings obtained through quantitative and qualitative analyses. By comparing expert opinions with students' test results, survey responses, interview data, and observations, the researchers ensured methodological triangulation and increased the credibility of the study. The experts' evaluations confirmed that integrating modern technologies had a positive impact on students' communicative competence, particularly with regard to speaking confidence, the quality of their academic writing, interactive communication, and learner autonomy.

The empirical stage of the study involved implementing the developed programme in the educational process, followed by an analysis of the results obtained. Throughout the pedagogical experiment, educational observation was employed as an overarching method to track the dynamics of students' communicative, cognitive, creative, and organisational skills in various educational activities in English.

Within the classroom sub-stage, specially designed tasks and exercises aimed at applying modern technologies to develop communication skills in English, teamwork, critical thinking, and creativity were performed. The level of communication skills was determined using the "Continue the story" and "Describe the picture" exercises. Group projects were used to assess teamwork skills. Critical thinking was assessed using the exercises "What will happen if...?" and "Justify the answer". Creativity was assessed using the exercises "Create your own story" and "Finish the story".

In the extracurricular stage, students were involved in activities such as volunteering and group creative projects to develop their English skills. Virtual excursions in English were conducted, and students were involved in creating presentations and reports using educational platforms. An interdisciplinary approach was implemented through the integration of knowledge from various professionally oriented courses in English in the course of such types of work.

In parallel, English teachers assessed students' communicative skills on a scale from 1 to 12, where 1 represented the lowest level, and 12 represented the highest. The sample included six teachers, one of whom was a Doctor of Pedagogical Sciences and five of whom were Candidates of Pedagogical Sciences. They all teach English to undergraduate and graduate students. All of the teachers had over 10 years' experience, which formed the basis for their involvement as experts.

The final stage of the study involved analysing the work of students and summarising the results of the teacher questionnaire. Descriptive statistics methods were used for the initial assessment of the sample, and qualitative analysis methods were used to analyse the questionnaire and observation results. The qualitative approach enabled us to examine not only measurable learning outcomes, but also students' experiences, attitudes, perceptions, and behavioural changes throughout the educational process. One of the primary qualitative methods employed in the study was observation.

During the implementation of technology-enhanced English for Academic Purposes (EAP) courses, researchers observed students participating in classroom discussions, collaborative tasks, presentations, and online interactions. Particular focus was given to

learners' communicative behaviour, confidence in speaking, engagement in academic communication, and ability to interact effectively in digital learning environments. This enabled us to identify changes in students' communicative strategies and levels of participation throughout the experiment.

Another important qualitative method was conducting semi-structured interviews with students and teachers. These interviews provided deeper insights into participants' perceptions of digital technologies, such as mobile learning applications, artificial intelligence tools, automated writing evaluation systems, and online collaborative platforms. Students discussed the advantages and challenges of using these technologies, while teachers reflected on their effectiveness as teaching tools and their influence on students' academic communication skills. The interviews allowed us to collect rich descriptive data and gain a deeper understanding of individual learning experiences.

We also applied content analysis to evaluate students' written assignments, reflective journals, presentations, and online discussions. This method helped us to identify recurring themes related to the development of communicative competence, including improvements in academic vocabulary, fluency, coherence, argumentation, and interaction skills. Through content analysis, the study examined how students adapted their communication styles when working with digital technologies and AI-assisted educational tools.

Additionally, a case study analysis was conducted to examine successful instances of technology integration in EAP courses. Learning situations, both individual and group, were analysed to determine how technological tools supported communication, collaboration and learner autonomy. The case studies showed how students used technology to complete academic tasks, take part in discussions and enhance their speaking and writing skills.

The study also incorporated a comparative qualitative analysis, enabling us to compare students' communicative behaviour before and after the implementation of modern technologies. Changes in students' confidence, participation, academic interaction, and ability to express ideas effectively in English were analysed. These comparisons provided evidence of the positive influence of digital tools on the development of communicative competence.

Furthermore, the qualitative analysis included interpreting students' feedback from open-ended questionnaires. Participants reflected on their experiences with AI tools, mobile applications, and automated feedback systems, sharing their views on motivation, accessibility, and the effectiveness of digital learning environments. These responses helped us to understand the emotional and psychological aspects of technology-enhanced language learning.

Mathematical calculations, data processing, and analysis methods using Excel were employed throughout the study. To provide a holistic view of the process of developing English-language communicative competence, a comprehensive approach was adopted, incorporating pedagogical substantiation of criteria based on modern scientific literature, generalisation of practical experience, and determination of levels of competence formation. The study was conducted confidentially and in accordance with ethical norms within the framework of extracurricular activities held at the specified higher educational institutions.

RESULTS

At the start of the experimental study, the experts assessed each student's level of English proficiency in all language skill areas: reading, writing, speaking, and listening. Table 1 shows the participants' average results. In general, we can see that receptive skills (listening and reading) are better developed than productive ones (speaking and writing). So, they need to improve. The results of the assessment of students' English proficiency in all language skills by experts are given in the table 1. The table shows the arithmetic mean for each lecturer, based on data from all students in the group.

Table 1

Data on lecturers' assessment of students' English language proficiency during peer review

	Listening	Speaking	Reading	Writing
Lecturer 1	8.4	6.1	7.9	6.8
Lecturer 2	7.5	5.4	8.6	5.9
Lecturer 3	9.6	4.7	9.4	7.3
Lecturer 4	10.2	7.1	6.9	6.6
Lecturer 5	9.3	5.6	8.4	5.7
Lecturer 6	10.8	6.1	7.8	6.4
Average data	9.3	5.8	8.2	6.5

We can see that the most developed skill among students is listening, while the least developed skill is speaking. Therefore, the next stage of our research was aimed at finding the significant tools for developing English language communicative competence. As mentioned earlier, the expert assessment method made it possible to identify the most effective means of developing future teachers' English language communicative competence in higher education institutions. These were *mobile-assisted learning (MAL)*, *using ChatGPT and generative artificial intelligence (AI)*, and *automated writing evaluation (AWE)*.

Mobile-assisted learning plays a significant role since mobile learning is one of the most important innovations in teaching to date. Once language resources are available on phones, tablets, and other portable devices, learners have access to them wherever and whenever they need them. This sort of access enables EAP learners, many of whom have rather demanding academic schedules, to develop their language skills at their own pace. Such settings enhance learner independence, as opposed to traditional settings where the emphasis was usually on instructor-led activities and group work. Using mobile devices, students can customise their learning experience and mix it up with other formats. Researchers Xodabande and Boroughani (2023) obtained similar results and demonstrated the effectiveness of mobile learning for teaching English for academic purposes.

In the research, the scientists found that form-focused instruction (FFI) proved to be a highly effective form of mobile learning for English for Academic Purposes (EAP), in which academic vocabulary was taught through direct and conscious scrutiny by the learner. In the latest study, which involved university students learning English as a foreign language, they demonstrated that the experimental group, who underwent FFI

training using digital flashcards on a mobile device, achieved significantly higher scores than the control group, who were taught using paper-based word lists. The results of the experiment showed that the experimental group improved their knowledge of receptive vocabulary (understanding academic words) and productive vocabulary (correctly using these words in writing and speaking) (Xodabande & Boroughani, 2023). These findings further emphasise the importance of active, deliberate vocabulary learning supported by mobile devices in developing academic literacy.

Despite the advantages it offers, implementing m-learning for English for Academic Purposes remains challenging. Issues to be resolved include gaps in digital literacy, unequal access to technology, and distractions from non-academic apps. These issues must be addressed through effective curriculum design and institutional support. Teachers must ensure they convey the appropriate knowledge regarding these tools and create environments in which learners can practise using them in meaningful academic contexts.

However, our research showed that m-learning remains a facilitator of EAP instruction. Mobile applications link the theory practised in the classroom to the reality of academic work outside the classroom by providing learners with carefully designed, motivating, and efficient means of developing academic vocabulary and reading skills. Purposefully integrating them into language programmes formed an indispensable facet of contemporary web-assisted language learning, correlating with the research of Xodabande and Boroughani (2023).

The development of generative AI tools, particularly ChatGPT, has engendered a radical shift in EAP instruction. ChatGPT provides students with the opportunity to develop critical thinking, problem-solving, and academic writing skills through interaction with an AI system that engages in dialogue and provides personalised feedback. This aligns with the findings of Shi et al., who determined that, unlike older computer programs, ChatGPT engages in interactive, on-demand, contextualised dialogue, which has significant implications for language-learning applications.

Our studies on the role of ChatGPT in EAP contexts demonstrate its effectiveness as a facilitation and motivation tool. The scientists (Xodabande & Boroughani, 2023) found that ChatGPT heightened students' feelings of autonomy and competence, as it gave them the opportunity to practise independently, receive non-judgemental feedback, and experiment with academic language in a safe, low-pressure environment.

This is in accordance with self-determination theory, which states that intrinsic motivation is important for fulfilling students' psychological needs. Conversely, other scientists found that students in the experimental group who used ChatGPT outperformed those relying solely on traditional AWE tools, demonstrating stronger gains in organisation, coherence, and overall writing quality (Shi, et al., 2025).

However, using ChatGPT does carry some risks and trade-offs. Firstly, there is the issue of creativity and the development of the "ideal L2 writing self", as Shi et al. (2025) put it. Overreliance on ChatGPT gives students a shortcut to developing their own academic voice. Du and Alm (2024) also warn that heavy use of ChatGPT may limit meaningful and collaborative peer-instructor interactions. Further complications arise from ethical issues, including plagiarism, authorship, and transparency.

In order to harness ChatGPT's potential and minimise its shortcomings, instructors should consider some form of guided integration. This would mean ChatGPT acting as a supplement to, rather than a substitute for, teacher feedback. Assignments could be

designed to require students to analyse and interpret AI suggestions, building their awareness and understanding of digital literacy from an ethical standpoint. When used thoughtfully, ChatGPT can support EAP learning by providing students with an accessible, personalised approach while maintaining the human elements of creativity, critical thinking, and academic integrity.

Writing correction tools have become an increasingly common feature of Academic English (EAP) classrooms. For example, we used Grammarly and Criterion. These AWE systems were initially designed for large-scale summative assessment purposes, but are now widely used to provide instant formative feedback.

They helped us direct learners to areas such as vocabulary, grammar, organisation and clarity, enabling students to use this feedback to improve and revise their writing independently. Foreign scientists (Karatay & Karatay, 2024) also described the results of their research, which correlate with our own.

Our research proved that AWE systems can potentially considerably increase fluency and linguistic accuracy in writing when used correctly. However, while AWE is effective at addressing lower-order concerns, it is not effective enough at encouraging higher-order academic writing skills such as argument construction, critical thinking, and academic voice.

Ideally, AWE would be combined with teacher feedback, capitalising on the efficiency of machines in correction and the depth of instruction provided by humans. This hybrid approach enables students to benefit from immediate feedback on surface-level issues while also supporting them in the deeper reflective processes required for advanced academic writing. A set of tools that has shaped EAP instruction includes ChatGPT, mobile learning, and automated writing evaluation (AWE). These technologies have made flexible, data-driven, differentiated learning opportunities possible, but they also require very careful pedagogical planning.

The effective implementation of these new EAP trends depends on blended learning models. Face-to-face sessions facilitate critical discussion and collaborative activities, while mobile-assisted tools help undergraduates to acquire academic vocabulary and reading skills outside the classroom (Xodabande & Boroughani, 2023). In contrast, AWE provides real-time feedback on lower-order concerns, enabling teachers to engage in discussions about higher-order academic skills, such as argumentation and rhetorical strategies.

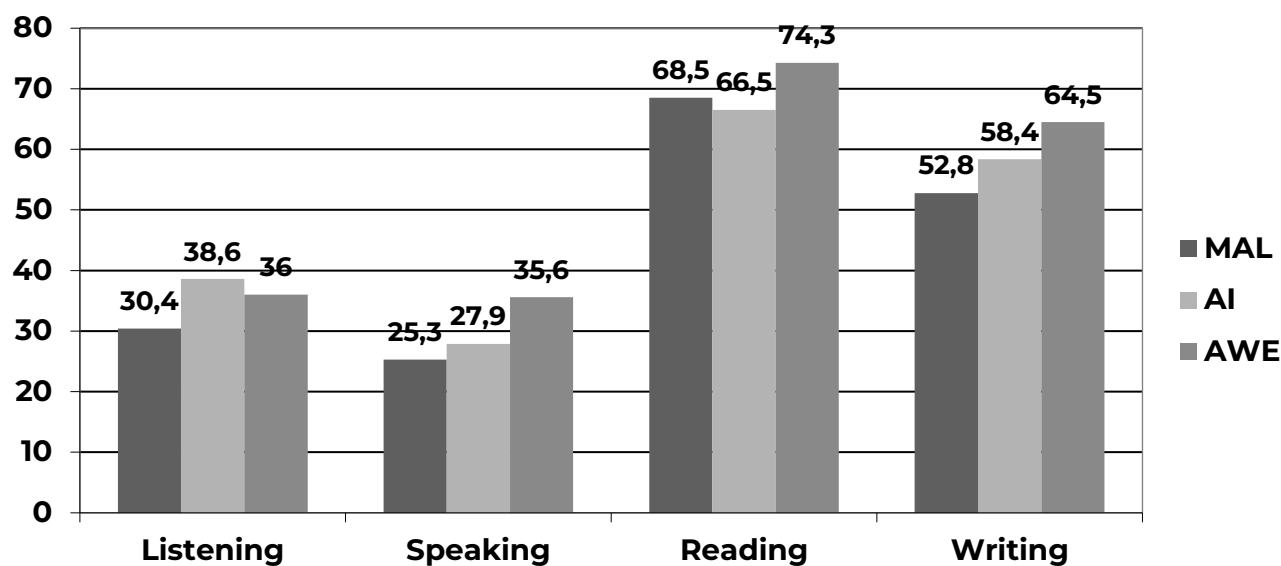
Supervision is likewise needed when students use ChatGPT. Although ChatGPT may encourage independent thinking and provide specific feedback, reliance on it can undermine intrinsic motivation and creativity. Faculty members sometimes had to encourage virtuous use of AI and help students address critical issues with AI suggestions, such as plagiarism and lack of a genuine academic voice.

Last but not least, digital literacy should lie at the heart of EAP programmes to ensure equal access for all and maximise the benefits of these technologies. Through this combination of technological progress and human-facilitated instruction, an EAP programme can equip learners with the language knowledge and digital skills required to thrive in global, technology-based academic environments.

After using the above-mentioned tools to develop the English-speaking communication skills of undergraduates, the influence of each tool on all language skills was analysed. The results are shown in the diagram (see Figure 1).

Figure 1

The influence of modern technologies on students' proficiency in all English language skills



The results of the study show that various modern technologies impact different language skills. Mobile learning, in particular, has improved students' vocabulary the most, which in turn improves their listening and reading skills. ChatGPT has improved the speaking and expression skills of master's students. AWE significantly improved the writing skills of university students.

The diagram shows how modern educational technologies influence the development of four key language skills. The data clearly demonstrate that the impact of each technology varies, with certain tools being more effective for specific competencies. In the area of listening, for example, AI had the greatest impact (approximately 39.7), followed closely by AWE (36). In contrast, MALL had the lowest score (30.4). This suggests that AI-powered tools, likely through interactive dialogue, speech recognition, and contextualised responses, provide richer auditory input and more dynamic listening practice. Although mobile learning also supports listening through multimedia content such as podcasts or videos, it appears to be less adaptive than AI systems.

In terms of speaking skills, AI once again takes the lead with a score of 27.9, outperforming both AWE (35.6) and MALL (25.3). Although AWE is not usually intended for oral communication, its relatively high score may reflect indirect benefits, such as improved language structure that can be applied to speaking. Nevertheless, AI's conversational capabilities make it the most effective tool for improving oral proficiency, especially for master's students who need more advanced expressive skills and real-time feedback.

The most notable differences are observed in reading skills, where AWE achieves the highest score (74.2), which is slightly higher than the scores achieved by MALL (68.5) and AI (66.5). This suggests that tools designed for text analysis and feedback can significantly improve reading comprehension by exposing learners to structured texts and encouraging attention to detail. MALL also performs strongly in this area, likely due to its accessibility and exposure to diverse reading materials. While still effective, AI may be slightly less focused on sustained reading tasks than the other technologies.

AWE's most notable advantage lies in its ability to significantly enhance writing skills, outperforming both AI (60.4) and MALL (52.8) by approximately 14 points. This is to be

expected, given that AWE systems are specifically designed to evaluate written texts, provide corrections, and offer suggestions for improvement. They help students to refine their grammar, coherence, and academic style, making them particularly valuable for university-level learners engaged in formal writing tasks.

Overall, the diagram shows that MALL is particularly beneficial for vocabulary acquisition and foundational skills, which indirectly support reading and listening. AI technologies, such as ChatGPT, excel in the interactive and communicative aspects of language learning, particularly in terms of speaking and expressive abilities. Meanwhile, AWE systems are most effective in developing literacy-related skills, particularly writing and reading, due to their focus on textual analysis and feedback.

Table 2

English proficiency of university students in all language skills before and after the pedagogical experiment

	Listening		Speaking		Reading		Writing	
	Before	After	Before	After	Before	After	Before	After
MAL	9.3	9.5	5.8	6.2	8.2	9.4	6.5	7.8
AI	9.3	9.6	5.8	7.1	8.2	9.6	6.5	8.1
AWE	9.3	10.2	5.8	7.3	8.2	10.2	6.5	8.3
Average	9.3	9.8	5.8	6.9	8.2	9.7	6.5	8.0

The results of the study, presented in Table 2, show that our methodology is effective, as students' reading and writing skills have improved significantly. This growth was facilitated by the use of automated writing evaluation. Generative artificial intelligence, in particular ChatGPT, has contributed to improving students' spoken English. In conclusion, the findings emphasise the importance of integrating multiple technologies into language education. Rather than relying on a single tool, a blended approach enables educators to utilise the strengths of each technology, thus supporting the development of all four language skills.

DISCUSSION

The results align with and extend existing scholarship on developing English language communicative competence in higher education in Ukraine (Ptushka, 2024), particularly research addressing the use of modern technologies in the university education process (Gulich & Chetveryk, 2025). In a broader disciplinary context, a team of Ukrainian scientists (Mykytenko et al., 2022) identified intercultural communicative competence development as the main quality of modern journalism students. However, there are some challenges associated with using modern tools for learning English (Kostikova et al., 2024). Our findings corroborate concerns about the fact that a substantial proportion of students are unable to engage in fully online learning.

However, some issues regarding research are being discussed. *Firstly*, AWE systems provide instant corrections of grammar, spelling, punctuation, vocabulary usage and sentence structure. Students receive feedback immediately after writing, allowing them to revise and improve their work multiple times. *Secondly*, AWE tools analysed elements such as coherence, cohesion, organization, lexical diversity, and academic style. These are precisely the elements that determine writing quality, so the feedback was highly targeted. *Thirdly*, students increased their writing practice and were more willing to

write multiple drafts when feedback was available instantly. Moreover, frequent revision strengthens writing competence and self-editing skills. Personalized learning was useful as AWE identified individual weaknesses and provided recommendations tailored to each student. Students could focus on their specific writing issues rather than receiving general feedback. At the same time, the advantage for teachers was reduced workload. Teachers could devote more time to higher-level aspects of writing, leaving the system to handle routine corrections. Consequently, students receive more comprehensive support.

In our research, we used AI for interactive communication. AI tools simulated real conversations, creating opportunities for meaningful interaction. Students could engage in dialogues, role plays, interviews and discussions at any time. Moreover, they experienced reduced speaking anxiety, often feeling less nervous when speaking with AI than with teachers or classmates (Gulich & Chetveryk, 2025). This reduction in anxiety increased their participation and willingness to communicate. It is worth noting that the students had unlimited conversational practice, as, unlike classroom interaction, the AI was available at any time and the students could practise speaking as often as they wanted. The research showed that developing communicative competence with the help of AI encouraged spontaneous responses, negotiation of meaning and argumentation, and that these skills were central to oral communication. Furthermore, the students experienced authentic language exposure, as AI provides natural conversational models and exposes learners to varied vocabulary and discourse patterns, enhancing fluency and speaking confidence.

The rather unexpected findings can be explained by the fact that each technology directly supported the skill for which it was designed. AWE improved writing through continuous corrective feedback, revision and text-focused analysis, while AI conversational tools influenced speaking improvement through interactive dialogue, communicative practice and increased learner engagement.

These results are consistent with current research on technology-enhanced language learning, which suggests that educational technology is most effective when its functionality is aligned with the target language skill.

Another unexpected finding of the study was the relatively high impact of Automated Writing Evaluation (AWE) on students' listening performance. However, we can explain the result with several factors. Firstly, AWE tools expose learners to extensive written input and corrective feedback, contributing to vocabulary acquisition and greater language awareness. Improved vocabulary knowledge is strongly associated with better listening comprehension, as learners can recognise and process a wider range of lexical items during listening tasks. Secondly, AWE platforms provided explanations of language errors and suggestions for improvement, helping students to develop metalinguistic awareness, which facilitates the comprehension of spoken language. Thirdly, the repeated processes of drafting, revising and analysing feedback may enhance overall language proficiency, which can then be transferred to receptive skills such as listening.

Despite the positive findings, several limitations should be acknowledged. Firstly, the study was conducted at a single university, which may restrict how widely the results can be applied. The institutional characteristics, curriculum design, technological infrastructure and student demographics could all have influenced the outcomes. To increase external validity, future studies should involve multiple universities from different regions and educational contexts. Secondly, the sample size was relatively small. While the number of participants was sufficient for exploratory analysis, a larger

sample size would provide more reliable statistical evidence and enable more robust comparisons between different technological interventions. Thirdly, the study partly relied on expert evaluation to assess students' communicative competence. Although experienced EAP instructors were involved and the evaluation criteria were standardised, a certain amount of subjectivity cannot be ruled out. The assessment process may have been influenced by individual perceptions of students' speaking, writing and communicative performance. Future research could complement expert judgements with additional objective measures, such as standardised language proficiency tests or automated performance analytics. Another limitation concerns the duration of the intervention. As the study only measured outcomes over a specific instructional period, the long-term sustainability of the observed improvements was not examined. Longitudinal studies would be valuable in determining whether the benefits of technology-enhanced EAP instruction persist over time.

CONCLUSIONS

Thus, in the context of the evolving educational landscape, the most relevant and progressive methods of teaching English at university level are mobile-assisted learning, ChatGPT and other forms of generative artificial intelligence, and automated writing evaluation. These modern technologies are a promising addition to higher education, covering various language skills and enabling students to communicate wherever and whenever they want. They enable students to recognise and hone abilities relevant to social professions, while fostering critical thinking, problem-solving and analytical skills – all of which are integral to real-life situations and allow students to apply their acquired competencies in practice.

The rapid developments in digital technologies have thus brought about a major reform of EAP instruction. Mobile-assisted learning environments have enriched academic vocabulary and reading strategies, providing learners with anytime, anywhere access to study resources for independent learning. If used carefully to avoid dependency issues and ethical concerns, generative AI tools, especially ChatGPT, can act as an interactive, one-to-one tutor, promoting learner independence and enhancing writing skills academically. Conversely, AWE systems can provide instant feedback on grammar and organisation when used alongside teacher-led feedback, thus speeding up the revision process.

A progressive technology-oriented blended approach that strikes a balance between innovative schooling and human interaction is now poised to be accepted for EAP instruction. These tools, when used judiciously by instructors, will help develop students who have not only advanced academic proficiency but also great digital literacy skills. Students thus prepared will undoubtedly enter academic setups that speak increasingly in a global and technology-driven milieu.

CONFLICT OF INTEREST

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ARTIFICIAL INTELLIGENCE STATEMENT

No artificial intelligence tools were used in the preparation of this manuscript.

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