UDC 378.147:811
DOI: https://doi.org/10.17721/2415-3699.2024.19.08

Alla MELNYK, PhD (Pedagog.), Assoc. Prof.
ORCID ID: 0000-0002-9093-1225
e-mail: alla-i@ukr.net
Kyiv National Linguistic University, Kyiv, Ukraine

GEN AI AND FLIPPED LEARNING: REINFORCING PRE-SERVICE ENGLISH TEACHERS' PROFESSIONALLY FOCUSED COMMUNICATIVE COMPETENCE

Background. *The results of theoretical and practical research on the feasibility of utilizing generative artificial intelligence (GenAI) in practical foreign language training for students at the university level have been emphasised. Furthermore, the importance of students understanding GenAI not as a template for plagiarism but rather as an unavoidable phenomenon of our time and an effective tool to prepare them for new professional challenges has been highlighted.*

The purpose of the article is to investigate the peculiarities of using large language models (LLM) in the context of flipped learning (FL) for pre-service English language teachers.

The scientific novelty of the study is to highlight the facilitating use of chatbots in the process of reinforcing higher education students' professionally focused communicative competence (PFCC) continuum.

Methods. *A complex of interrelated theoretical methods – analysis, synthesis, comparison and generalization – served as the analytical lens for scrutinizing the extant scientific publications from the Scopus and Web of Science databases, Internet resources, and the author's pedagogical experience. The research was guided by the principles of human-centered, personality-activity, competence-based, and blended learning approaches.*

Results. *The integration of LLMs into the FL is regarded as a distinctive approach to enhancing PFCC, significantly increasing students' motivation to learn, providing them with experience of asynchronous and synchronous learning activities. Five types of prompts for working with ChatGPT bots from OpenAI and Google Bard, as well as exercises on the formation of pre-service English teachers' linguistic, speech, educational and strategic, linguosociocultural competences have been presented.*

Conclusions. *GenAI offers new possibilities for improvement of practical language practices, the intensification of the interactivity of the educational process, and the implementation of new forms and methods of professional training. In order to maintain the integrity of contemporary higher education and guarantee its sustainability and rigorous quality, it is advisable to cultivate students' proficiency in the utilization of LMMs. Chatbots into the classroom setting, coupled with the instruction of students, is not indicative of a complete replacement of a teacher. Rather, it is a reflection of the necessity for educators to possess the skills to effectively collaborate with these models.*

Keywords: *educational and strategic competence, large language models, linguistic competence, linguosociocultural competence, pre-service English teachers, prompt, speech competence.*

Background

Innovations in the field of GenAI often outpace the rate of educational reforms, as systems are not always prepared to adopt these new technologies. UNESCO's first global guidance on GenAI in education aims to support countries to implement immediate actions, plan long-term policies and develop human capacity to ensure a human-centred vision of these new technologies (UNESCO, 2023, short summary). The 2019 Beijing Consensus on Artificial Intelligence (AI) and Education affirms that the use of AI technologies in education should enhance human capacities for sustainable development and effective human-machine collaboration in life, learning and work (UNESCO, 2023, p. 18). Schools and higher education institutions must develop an understanding of AI's potential benefits and risks in education to make informed decisions about its implementation.

Despite ongoing debates about AI technology, a humanistic approach to education should encourage teachers, students, and researchers to utilize this tool. It protects their individuality and serves as an educational resource that enhances engagement, yields tangible benefits, supports educational development, and contributes to a sustainable future. However, the value of GenAI technologies in education depends on the capacity of teachers and educators to deploy them effectively. These technologies require collective action to integrate effectively with other elements of the educational process, addressing the core challenges facing the higher education system.

Enhancing the PFCC of pre-service teachers via FL and through the remarkable capabilities of AI serves as a catalyst for the accelerated implementation of LLMs, whose role and importance are increasingly recognized in contemporary settings. Teachers must actively participate in designing and developing these models to improve their effectiveness. They can not pretend that their students won't use GenAI, so they must teach their students how to use it properly and be transparent about how they use the technology. As M. Fedorov, Vice Prime Minister for Innovation, Education, Science, and Technology Development – Minister of Digital Transformation, stated at the Forbes Ukraine Superhumans Forum in Kyiv on April 27, 2023: "Either you start using AI, or it will replace you" (How algorithms…, 2023). This underscores the urgency of integrating AI into educational practices. Introducing chatbots in the classroom and teaching students how to use them effectively and creatively is crucial. This is not to suggest that teachers may become unnecessary, but rather to emphasize that those who do not adeptly use and collaborate with GenAI risk redundancy. Incorporating chatbots into educational settings of FL can redefine the professional training of prospective language teachers, providing them with invaluable tools for their future careers.

Literature review. New approaches to the use of FL and chatbots have been explored in global theory and practice. These technologies have the potential to increase student engagement and improve learning outcomes by providing personalized support and opportunities for active learning (Lin, & Mubarok, 2021; Tangkittipon et al., 2020). FL overturns the traditional classroom model by allowing students to engage in activities outside of the classroom and using class time for discussion and problem-solving (Yusuf, & Taiye, 2021). This approach has increased student engagement and motivation (Almodaires et al., 2019). Similarly, chatbots provide students with personalised support and facilitate collaboration, feedback, and assessment (Chen et al., 2021).

The range of issues raised by the authors mentioned is pivotal for enhancing FL and ensuring an accessible educational process. However, the practical application of GenAI models in training pre-service English teachers has yet to be fully explored. As "the genie is out of the bottle", we recognize that the development of AI technologies is an inevitable trend of our time and a key to a sustainable higher education system. Yet, the question remains: Is there a way to embrace these technologies while maintaining integrity and not compromising the rigor required to deliver quality higher education?

Research objective. The aim of the article is to investigate the relationship between LLM and FL in the formation of pre-service teachers' PFCC. To achieve this goal, the following tasks should be performed: analyse previous research on the use of Gen AI in education and teaching English; characterise the features of writing prompts and identify their types; and highlight the facilitating uses and practical applications of chatbots in enhancing prospective English teachers' communicative competence.

Presentation of the core material. Text generative AI uses a type of ANN (Artificial Neural Network) known as a general-purpose transformer, and a type of general purpose transformer called a large language model. This is why AI Text GenAI systems are often referred to as large language models, or LLMs. The type of LLM used by text GenAI is known as a generative pre-trained transformer, or GPT (hence the 'GPT' in 'ChatGPT') (UNESCO, 2023, p. 9. The most popular tools for AI are automated computer programs – ChatGPT bots from OpenAI and Google Bard for text generation or "chatbots".

They can mimic human abilities, transfer knowledge, personalise and receive feedback, and present results in key symbolic representations of human thinking such as natural language texts, images (including photographs), videos, music, and software code. "By freeing humans from some categories of lower-order thinking skills, this new generation of AI tools might have profound implications for how we understand human intelligence and learning" (UNESCO, 2023, p. 7). The vast capabilities of LLM for processing information, writing texts, and creating artistic works carry potentially enormous implications for education. These models emulate the higher-order thinking central to human learning, compelling educational institutions to rethink both what they teach and how they teach it.

GenAI compromises the integrity of learning and promotes plagiarism. More and more students are using LLMs to support their writing or other creative activities, "to cheat on their assignments, thus undermining the value of learning assessment, certification and qualifications" (Anders, 2023). This can jeopardise the development of intellectual skills, reducing the critical thinking skills of students who sometimes "cut corners" or choose the shortest way to learn and tend to generate answers at the prompting of a chatbot instead of analysing.This technology raises questions about the integrity of learning since it can be used to cheat on term papers, module tests, and even online exams. Despite these concerns, many schools and universities have adopted the approach, believing that "rather than seek to prohibit their use, students and staff need to be supported in using GenAI tools effectively, ethically and transparently" (Russell Group, 2023). A critical consideration in this dimension is that AI is widely available and will continue to improve.

According to 2023 survey data on the governmental use of AI for education, only some seven countries (China, Finland, Georgia, Qatar, Spain, Thailand and Tьrkiye) reported that they had developed or were developing frameworks or training programmes on AI for teachers (UNESCO, 2023, p. 26). Singapore has been offering a dedicated platform for the AI capacity development of educational institutions through its AI Government Cloud Cluster which includes a dedicated repository of GPT models (Ocampo, 2023).

Although LMMs can be used to extend human thinking, they should not be allowed to usurp it. There is a concept of professions and AI in general where "there are two sort of distinctive areas where humans can bring something extra that even sort of AI in the longer distance is unlikely to bring. One of those is the social element, and the other is the kind of creative strategy, the kind of vision that AI is still not ready to give us" (Lee, 2018). We delegate tasks to Gen AI, which produces content confidently. However, it is pivotal to remember that it is merely a machine with no real-world awareness. AI cannot dictate how we learn or how we teach. Moreover, machines lack the social vision and emotional depth that teachers bring to the learning process.

For instance, in a class on "English Speaking and Writing Practice", students were analysing a grammatical aspect of intensifiers, which are used to further modify adjectives, adverbs or clauses. During this session, they examined the phrase "abundantly clear". When I asked them to identify words that are cognates of the intensifier "abundantly", they mistakenly proposed "abandoned". To clarify the difference between the words, I asked the AI to create a comparative image of the expressions "abundantly clear" and "abandoned house". In order to challenge the prevailing stereotypes held by students, it was recommended that they engage with the analysis of a comparative image having been generated by artificial intelligence (Figure).

Figure. A comparative image created by ChatGPT

ISSN 1728-3817

It is worth noting that the phrase "abundantly clear" is used in English to emphasise that something is very clear or there is no doubt about it. The LLM generated an image of the phrase "abundantly clear" as a glass of clear water. We were simply amazed at what model can do with image generation. However, we noticed that GPT-4 can not generate ideas for real-world problems because it lacks understanding of the actual objects underlying the language. The gap between bots that "appear" to understand the text and the "reality" that they do not truly comprehend the language and the real world can lead teachers and students to distrust their results and be critical of everything they produce.

Nevertheless, the achievements of generative models such as GPT-3.5/4, BingChat or Bard, GPT-4 enable their efficient use in developing pre-service teachers' PFCC – an ability and readiness to implement linguistic, speech, linguosociocultural, educational and strategic knowledge, skills, and abilities by integrating Gen AI into FL. We will demonstrate examples of tasks that incorporate GenAI into FL both at the in-class and out-of-class stages.

Methods

A complex of interrelated theoretical methods – analysis, synthesis, comparison and generalization – served as the analytical lens for scrutinizing the extant scientific publications from the Scopus and Web of Science databases, Internet resources, and the author's pedagogical experience. The research was guided by the principles of human-centered, personality-activity, competence-based, and blended learning approaches**.**

Results

Controlling the level of lexical linguistic competence is one way chatbots can be utilised. Systematising the learnt vocabulary enhances memorisation and allows students to review professionally focused vocabulary before taking quizzes, tests and module papers. For example, using this tool, a student can create a personalised test or quiz tailored to their personal and professional needs, which also enables them to assess their spelling skills. In the chat window, the student specifies the topic and relevant vocabulary, and the chatbot generates either an alternative version or a multiple-choice practice test. The latter is almost ideal for assessing "choosing the right word among words with similar meanings; choosing a word that fits the given context (phrase)" (Kvasova, 2009, p. 46). After the student's answer, the chat corrects mistakes. This process leads to a deeper understanding of the lexical aspects and promotes better memorisation.

No matter how clear the grammatical rules are, understanding them becomes easier when communicating with AI, which stimulates cognitive processes such as memory, attention, imagination, perception. This interaction helps clarify the essence of issues and discover new knowledge. As a result, the bot facilitates a deeper understanding of educational material, promotes better comprehension, and aids in mastering grammatical phenomena. When concersing with a chatbot, students can practice their language and speaking skills, but they need to frame their questions correctly. For example, grammatical errors can lead to the bot misinterpreting the questions, resulting in irrelevant or inaccurate answers. Additionally, since AI bots benefit from correct punctuation, it is pivotal to organise a text in a clear and unambiguous way. Gen AI models can struggle to deal with long prompts and with organising the information you enter, so try to use simple and direct language, and avoid being vague (Oliver, 2024). Students should always proofread their instructions to ensure that the LLM understands them clearly and correctly. Good instructions should be detailed, specific and productive. In this way, students can naturally structure learning information on their own, practise the grammatical structures of the language, the system of language units, and the rules for using language skills in natural communication in the target language.

In the study, the key to successful extracurricular (out-of-class) activities for prospective teachers of foreign languages is the development of their professionally focused learning and strategic competence. This implies their ability to choose rational learning strategies for the development of PFCC in general and, in particular, techniques that are most effective for working with LLMs.

It is important to enhance students' literacy in the field of AI and teach them to use it ethically, fostering a creative and critical approach to thinking. This includes understanding what GenAI models can and cannot do, enabling students to critically evaluate them and learn how to apply them where they can augment their ideas in personal and professional development.

The development of students' critical thinking in the process of FL, particularly through interaction with chatbots, depends on innovative yet safe methods. Teachers can instruct students to give the chatbot commands to "Write", "Explain" or "Create" something. Such instructions do not stifle creativity but rather purposefully enhance their ability to employ critical thinking and argumentation skills. The instructor creates an environment that requires the use of AI during preparation, encouraging students to check and select accurate facts, interact with the results, critique, edit, and improve them. Ultimately, the responsibility for deciding on the final version of their assignment rests with the students themselves.

Therefore, the function of GenAI should not be seen merely as a template for cheating but as a powerful tool for pedagogical communication, capable of identifying the thinking mechanisms of a prospective teacher's personality and revealing the basis for the formation of their PFCC. A strategic goal in preparing students for proficient work with LLMs is to teach them to write prompts (queries or instructions) for chatbots to achieve better results from the generated content. Since AI tools are highly sensitive to instructions, pre-service teachers need to know how to formulate a query that will ensure the most competent interaction.

As the practice has shown, GPT-4 often has trouble understanding the levels of the Common European Framework of Reference for Languages (CEFR). To overcome this problem, it is necessary to avoid using the terms A1-C2 when telling a Gen AI bot what style of language to use, instead, it is possible to write "basic English learner", "independent English learner", "proficient English learner".

It is important to encourage students to employ cognitive and metacognitive strategies – planning their actions to master the art of writing prompts. Students can use the following memos to assist them in crafting effective prompts:

Remember! AI bots respond better when they are told what they should do than when they are told what they should not do.

Remember! ChatGPT 4 can browse the Internet, but it does not function as well as search engines. Use the model for its primary purpose – to generate text and create images.

Remember! It is very important to fact-check to make sure that none of the 'hallucinations' that are common with these models have crept into the material you create with ChatGPT.

In addition, "a prompt that works well will not necessarily work the same way later, and different bots will react differently to the same prompt" (6 tips…, 2024). Keeping in mind the environmental impact of different AI tools, students can compare models, identifying what they achieve in the end, and then modify the model to suit their purposes. Thus, participants in the educational process can learn how to obtain the best results when they experiment with different LLMs simultaneously. For example, consider the following tasks:

1) *You have worked on a grammatical aspect where certain adjectives take on a slightly different meaning when they come before or after a noun. Do some research with GPT and Bard chat, using the same prompt, as these models use different types of input to some extent. Use the prompt-action as an assistant to English teacher, prompt-explanation, where it is needed to explain the concept of grammatical structure, and prompt-completion, designed to add the necessary information according to the context of the query. Evaluate the information and content created by chatbots. Which language model provides the best answers?*

2) *You are an English as an Additional Language Teaching Assistant. Explain in simple terms the difference between the grammar structures "the present students" and "the students present" to your students, advanced learner of English as a second language. Then write three other adjectives that take on a slightly different meaning when they come before or after a noun. Select the adjectives you believe are relevant and doublecheck that with reliable grammar resources or sites".*

3) *Create an AI-based test on the topic 'Using inquiry-based practice in teaching EFL to students of different abilities', then evaluate the answers you get from it, check the content on the basis of the research articles (1-5)* you have already reviewed, consider the SEARCH learning strategy when researching the topic (See SEARCH strategy memo). Also use your own knowledge to evaluate these responses, comment on what went well and what you would change, how you could improve the test created by GenAI. Use a Venn diagram to organise your notes. How are these versions similar? How are they different? In the middle cell of the diagram, present your revised version, which you improved based on what the GPT chat suggested. Send it to your teacher on the MS Teams platform.*

*Article 1. How Task Difficulty and Academic Self-Efficacy Impact Retrieval Practice Guidance https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1260084/full

Article 2. Strengthening Concept Learning by Repeated Testing https://www.researchgate.net/publication/259210050_Strengthening_concept_learning_by_repeated_testing

Article 3. Improving Students' Learning With Effective Learning Techniques: Promising Directions From Cognitive and Educational Psychology https://pcl.sitehost.iu.edu/rgoldsto/courses/dunloskyimprovinglearning.pdf

Article 4. The Critical Importance of Retrieval for Learning https://www.researchgate.net/publication/5574966_The_Critical_Importance_of_Retrieval_for_Learning

Article 5. The science of effective learning with a focus on spacing and retrieval practicehttps://www.researchgate.net/publication/362093173_The_science_of_effective_learning_with_a_focus_on_spacing_and_retrieval_practice#fullTextFileContent

SEARCH strategy memo
(each letter stands for a word related to the search for information)

SOURCE: Where did this information come from? Can this source be trusted?
EVIDENCE: What evidence is there to support this information?
AUTHOR: Who wrote it and what motivated them to do so?
RECENCY: How recent is the source? What indicates its timeliness?
CLARITY: How clearly is the information presented? Is it easy to understand?
HELPFULNESS: Is the information useful? Is it relevant to my topic?

Possession of speech competence in speaking is attainable if specific skills are developed. One of the most efficient methods involves using active recall questions with the help of a bot that can pose questions on any topic in real time. For example, a student can go to YouTube, open the transcription tab, copy the video text, and paste it into a GPT dialogue box. Then, they can ask the bot to formulate theses or summarise the key points for self-testing. Here are two example of prompts providing material for analysis: *1) You are an English as an Additional English Teacher. I will give you access to [type of material]. Write me a thesis statement. 2) You are an Additional Language Teacher Assistant. Ask me individual questions that I will need to answer in the chat window.*

When teaching prospective teachers professional-oriented speaking and writing, it is advisable to use a brainstorming strategy when interacting with GenAI. The essence of this strategy is to quickly jot down initial ideas that come to mind within a few minutes. Subsequently, words with a more abstract meaning are selected, along with words denoting specific concepts. A thesis is formulated, and a sequence of arguments is developed that expands on the main idea. This method develops associative and hierarchical thinking – from the general to the specific. It is an excellent technique that encourages students to be more creative, both individually and in collaboration with LLMs, which can help them explore all possibilities and generate numerous ideas in a short period. These ideas can be utilised to describe, compare, find arguments, explain causes of problems, and propose solutions, among other tasks. In addition, a quick questioning technique is employed to rapidly accumulate many ideas, and the Visual Mind Map can help create an effective plan for future writing, discussing problem situations, or project work (Melnyk, 2023).

The extracurricular information and preparation stage involves seeking and obtaining the information necessary for students to participate in discussions coordinated by GenAI. This includes analysing and predicting the content of the discussion. The key task at this stage is to process additional information required for the discussion, as students may lack reasoned statements and knowledge of psychology, pedagogy, methodology, psycholinguistics, linguistics, as well as life and language experience necessary to address the problem. Therefore,

asynchronous self-study work outside of class time is important, as it not only encourages the initiative of participants' speech behaviour in the classroom, but also facilitates a smooth transition from prepared to spontaneous speech. To prepare for discussions using LLMs, students improve their speaking and reading skills through interaction with the system. This involves understanding the general content of materials, summarising facts, relating events, making connections, and interpreting the information received. The chatbot serves as a communication tool that allows students to exchange ideas proficiently in both oral and written speech.

There are the following tasks for the in-class motivational and out-of-class information-preparation stages to enhance professionally focused speech competence in writing, linguosociocultural competence and use a prompt-scenario, where a specific situation is to be described.

1) *If you were an outstanding teacher educator, what would you leave in a time education capsule (TEC) for your descendants. Off the top of your head, what items would you include in your TEC?*

2) *Ask Chat GPT to brainstorm and suggest some ideas to inspire you to create a time education capsule. Analyze and compare what it says. Evaluate whether it is completely ludicrous or absolutely fantastic. Would you like to add anything that the AI gives you? Fill in the ideas in the table below:*

AI ideas	My ideas (final version)
…	

3) *Present your revised version of what items you will include in your TEC that you've improved based on your ideas and what the GPT chat has told you. Is your version different now than when you started this project (ex 1.1). Submit it to your teacher via the MS Teams.*

4) *Have you ever heard of dyslexia? Many people believe that the famous physicist, Albert Einstein, was dyslexic. Carl Philip, a Swedish prince, helped to create and publish the audiobook "My Favourite Dyslexia". He was diagnosed with dyslexia when he was 14 years old, but it was only five years ago that he decided to speak about it publicly. Dyslexia, a hereditary condition in his family, caused him significant struggles in school. He faced difficulties with reading and making speeches,but also regards his dyslexia as an advantage at times, believing it enhanced his creativity. Imagine you are interviewing one of the famous dyslexic people. This famous person will be Chat GPT. Create a questionnaire. Write five questions that you would ask this person to share their methods for overcoming dyslexia difficulties in everyday life. Then analyze and evaluate the ideas and arguments presented by Chat. Decide with what you agree most and which statements you agree the least? Give reasons.*

5) Read the text below. Write an opinion essay summarizing and evaluating key points from the text. Use your own words throughout as far as possible, and include your answer in 240-280 words. Then use the following prompt: You are an English as an Additional Language Teaching Assistant. Check the opinion essay written by an advanced learner of English as a second language.

> Once my English major student cited Bruce Wilson, an Australian educator who said: A teacher needs to use approaches that enable young people to take responsibility for their learning. A teacher needs to negotiate a contract with young people, rather than impose their standards. In my opinion, freedom involves responsibility. We should give our students more freedom, but it should be freedom of creation. Higher quality of education cannot be achieved without changing the philosophy of the teacher and the learner – active partnership in seeking for knowledge vs. the philosophy of knowledge provider and passive receiver; encouraging individual choice and decision making vs. controlling and manipulating students; professional and student honesty vs. cheating and plagiarism. We are not supposed to spoon-feed students with facts, but to develop their creative thinking and ability to acquire knowledge on their own.

Discussion and conclusions

Summarising the above, it can be stated that the introduction of GenAI in the practical language training of students at the university level is an inevitable process of our time. It offers new possibilities for improvement of educational practices, the intensification of the interactivity of the educational process, and the implementation of new forms and methods of pre-service English teachers' professional training. The integration of LLM into the FL is regarded as a distinctive approach to reinforcing PFCC, offering a novel interpretation of the concept of 'student involvement in the context of professional training'. This approach facilitates the personalisation and development of each student's potential, enabling a tailored learning experience that aligns with the individual's unique capabilities and needs. This has the potential to significantly increase students' motivation to learn and contribute to enhancement of the PFCC continuum. It provides students with experience of asynchronous learning activities in both educational and professional contexts, and has a significant potential to increase interactivity at the synchronous stage.

The important thesis is that students should be encouraged to view chatbots not as a template of plagiarism, but as a potential tool for preparing them for new professional challenges and as an efficacious communication aid. This is particularly relevant for those training to become foreign language teachers, as they will eventually utilise LMMs for professional development.

In light of the human-centred approach, it is evident that the integration of GenAI technologies in education is futile without due consideration of human potential. The unprecedented spread of LLMs has created a unique opportunity for the educational community to foster a conducive information and communication environment for the current generation of students. Such a milieu would encourage independent thought, facilitate creative and critical thinking, and enhance mental intelligence.

It is imperative that educators take action to organically combine the benefits of OpenAI's ChatGPT and Google Bard bots with other elements of the educational process in order to address the fundamental challenges faced by the higher education system. The integration of chatbots into the classroom setting, coupled with the instruction of students on their optimal utilisation, is not indicative of a complete replacement of the teaching role. Rather, it is a reflection of the necessity for educators to possess the requisite knowledge and skills to effectively collaborate with AI.

In order to maintain the integrity of contemporary higher education and guarantee its sustainability and rigorous quality, it is advisable to cultivate students' proficiency in the utilisation of Gen AI and instruct them in the productive collaboration with LMMs. This should be done in a manner

that encourages ethical, creative and critical engagement with these technologies, and the formulation of diverse prompts (e.g., prompt-action, prompt-explanation, prompt-filling, prompt-providing material for analysis, prompt-scenario) in chatbots to optimise the quality of generated content and the efficacy of interaction.

We see prospects for further research in describing the ways of using LLMs in combination with interactive cooperative and collaborative learning technologies in blended classes in the context of professional training of prospective English teachers.

References

Almodaires, A. A., Alayyar, G. M., Almsaud, T. O., & Almutairi, F. M. (2019). The effectiveness of flipped learning: A quasi-experimental study of the perceptions of Kuwaiti pre-service teachers. *International Education Studies*, 12(1), 10–23. https://doi:10.5539/ies.v12n1p10

Anders, B. A. (2023). *Is using ChatGPT cheating, plagiarism, both, neither, or forward thinking?* Cambridge, Cell Press. https://doi.org/10.1016 /j.patter.2023.100694

Chen, X., Zou, D., Xie, H., & Cheng, G. (2021). Twenty years of personalized language learning. *Educational Technology & Society*, 24(1), 205–222.

How algorithms will change bureaucracy (Interview with Mikhail Fedorov). (2023). Forbes Superhumans [in Ukrainian]. [Як алгоритми змінять бюрократію (Інтерв'ю з Михайлом Федоровим). (2023). Forbes Надлюди]. https://www.youtube.com/watch?v=eWtCiMz4hug

Kvasova, O. (2009). *The basics of testing foreign language skills and abilities.* Lenvit. [in Ukrainian]. [Квасова, О. (2009). *Основи тестування іншомовних навичок і вмінь.* Ленвіт].

Lee, K-F. (2018). *AI Superpowers: China, Silicon Valley, and the New World Order*. Boston, Houghton Mifflin Harcourt.

Lin, C.-J., & Mubarok, H. (2021). Learning analytics for investigating the mind map-guided AI chatbot approach in an EFL flipped speaking classroom. *Educational Technology & Society*, 24(4), 16–35.

Melnyk, A. (2023). The ChatGPT use in the professional training of prospective university English teachers. *Bulletin of the National University 'Chernihiv Collegium' named after T.G. Shevchenko, Series: Pedagogical Sciences,* 21(177), 100–107 [in Ukrainian]. [Мельник, А. І. (2023). Особливості використання чат-боту ChatGPT у навчанні професійно орієнтованого спілкування майбутніх викладачів англійської мови. *Вісник Національного університету "Чернігівський колегіум" імені Т. Г. Шевченка, Серія "Педагогічні науки"*, 21(177), 100–107].

Ocampo, Y. (2023). *Singapore Unveils AI Government Cloud Cluster*. Singapore, OpenGov Asia. https://opengovasia.com/singapore-unveils-ai-governmentcloud-cluster

Oliver, S. (2024). AI prompt writing for ELT teachers: 7 ingredients of a successful prompt. https://www.linkedin.com/pulse/ai-prompt-writing-elt-teachers-7-ingredients-gwdyc/

Russell Group, 2023. *Russell Group principles on the use of generative AI tools in education*. Cambridge. https://russellgroup.ac.uk/media/6137/rg_ai_principles-final.pdf

Tangkittipon, P., Sawatdirat, A., Lakkhanawannakun, P., & Noyunsan, C. (2020). Facilitating a flipped classroom using chatbot: A conceptual model. *Engineering Access*, 6(2), 103–107. https://ph02.tci-thaijo.org/index.php/mijet/article/view/10.14456.mijet.2020.20

UNESCO. (2023). *Guidance for generative AI in education and research*. Paris, UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000386693

Yusuf, B., & Taiye, M. A. (2021). A flipped learning environment: A disruptive approach for traditional classrooms? *International Journal of Education, Psychology and Counseling*, 6(42), 83–98. https://doi.org/10.35631/IJEPC.642008

Отримано редакцією журналу / Received: 17.05.24
Прорецензовано / Revised: 12.06.24
Схвалено до друку / Accepted: 28.10.24

Алла МЕЛЬНИК, канд. пед. наук, доц.
ORCID ID: 0000-0002-9093-1225
e-mail: alla-i@ukr.net
Київський національний лінгвістичний університет, Київ, Україна

ГЕНЕРАТИВНИЙ ШТУЧНИЙ ІНТЕЛЕКТ І ПЕРЕВЕРНУТЕ НАВЧАННЯ: ФОРМУВАННЯ ПРОФЕСІЙНО ОРІЄНТОВАНОЇ КОМУНІКАТИВНОЇ КОМПЕТЕНТНОСТІ МАЙБУТНІХ УЧИТЕЛІВ І ВИКЛАДАЧІВ АНГЛІЙСЬКОЇ МОВИ

В с т у п . ***Представлено результати теоретико-практичного дослідження щодо доцільності використання генеративного штучного інтелекту у практичній іншомовній підготовці студентів на університетському рівні й акцентовано увагу на важливості його осмислення здобувачами освіти не як шаблона для списування, а як ефективного інструменту для їхньої підготовки до нових професійних викликів.***

Мета статті: дослідити архітектуру великих мовних моделей та на конкретних прикладах довести ефективність їхнього застосування в процесі перевернутого навчання майбутніх учителів і викладачів англійської мови.

Наукова новизна: увиразнити шляхи використання чат-ботів для цілісного формування професійно орієнтованої комунікативної компетентності здобувачів вищої освіти.

М е т о д и . ***Використано комплекс взаємопов'язаних теоретичних методів аналізу та синтезу, порівняння та узагальнення, що слугував аналітичною лінзою для ретельного вивчення наявних наукових публікацій із баз даних Scopus та Web of Science, інтернет-ресурсів, а також педагогічного досвіду автора. Означені методи дослідження ґрунтувалися на ідеях людиноцентричного, особистісно-діяльнісного, компетентнісного та змішаного підходів до навчання.***

Р е з у л ь т а т и . ***Констатовано, що великі мовні моделі сприяють формуванню професійно орієнтованої комунікативної компетентності майбутніх учителів і викладачів англійської мови, маючи великий потенціал щодо підвищення мотивації навчання, надаючи персоналізовану підтримку, забезпечуючи їх досвідом асинхронної та синхронної навчальної діяльності в освітньому та професійному аспектах. Розглянуто п'ять типів підказок (промптів) для роботи із чат-ботами ChatGPT від OpenAI та Google Bard, а також вправи щодо формування мовної, мовленнєвої, навчально-стратегічної та лінгвосоціокультурної компетентностей.***

В и с н о в к и . ***Генеративний штучний інтелект – неминучий феномен сьогодення – уможливлює удосконалення іншомовних практик, упровадження нових форм і методів фахової підготовки майбутніх фахівців, активізацію інтерактивності освітнього процесу в умовах перевернутого навчання та трактується як особливий спосіб збагачення професійно орієнтованої комунікативної компетентності. Щоб зберегти цілісність сучасної вищої освіти та не жертвувати строгістю, необхідною для надання їй якості та сталості, варто формувати у студентів навички грамотності у сфері великих мовних моделей і розвивати вміння ефективно створювати різновиди промптів, зокрема і промпт-дію, промпт-пояснення, промпт-заповнення, промпт-надання матеріалу для аналізу, промпт-сценарій для досягнення найкращого результату згенерованого контенту та максимально ефективної взаємодії.***

К л ю ч о в і с л о в а : ***великі мовні моделі, лінгвосоціокультурна компетентність, майбутні вчителі та викладачі, мовленнєва компетентність, мовна компетентність, навчально-стратегічна компетентність, промпт.***

Автор заявляє про відсутність конфлікту інтересів. Спонсори не брали участі в розробленні дослідження; у зборі, аналізі чи інтерпретації даних; у написанні рукопису; в рішенні про публікацію результатів.

The author declares no conflicts of interest. The funders had no role in the design of the study; in the collection, analyses or interpretation of data; in the writing of the manuscript; in the decision to publish the results.