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### **Application of AI Technologies in Teaching ESL and ESP at Agro-Technical Higher Educational Institutions**

#### **Застосування ШІ у викладанні курсів ESL та ESP у агротехнічних закладах вищої освіти**

*The paper is aimed to contribute to lecturers' AI readiness and their understanding of potential benefits and drawbacks of AI technologies in order to integrate AI (namely, ChatGPT) into language education. The study offers recommendations on practical application of AI in teaching English as a Second language (ESL) and English for Specific Purposes (ESP) at agro-technical higher educational institutions, namely on localizing content, personalizing materials, developing specific language skills and soft-skills, introducing profession-specific learning materials and creating a comfortable learning environment. It discusses the impact of AI on language teaching, including its problems, concerns (plagiarism, bias, ethics, inequalities) and the ways it can transform language teaching and learning practices on condition of providing the AI readiness of both educators and learners.*

**Keywords:** *AI technologies, ChatGPT, English as a Second Language, English for Specific Purposes, teaching, learning environment, AI readiness, agro-technical higher educational institutions.*

*Стаття присвячена проблемі готовності викладачів до інтеграції технологій штучного інтелекту (ШІ) у процес іноземної комунікативної підготовки здобувачів освіти у агротехнічних ЗВО та розуміння потенційних переваг і недоліків використання ШІ, зокрема, ChatGPT. Дослідження пропонує рекомендації з практичного застосування ШІ у викладанні англійської мови як іноземної (ESL) та англійської мови за професійним спрямуванням (ESP) у агротехнічних закладах вищої освіти, зокрема щодо розробки навчальних матеріалів (лексика, граматики, усне мовлення, аудіо контент, письмо та переклад), локалізації контенту відповідно до певного регіону, персоналізації матеріалів, розвитку комунікативних умінь і soft skills, підготовки вузькопрофільних навчальних матеріалів для певної спеціальності, оцінювання та створення комфортного навчального середовища, враховуючи конкретні потреби окремого здобувача освіти, групи чи регіону. У статті обговорюється вплив ШІ на викладання мов, включаючи потенційні проблеми (плагіат, упередженість, етика, фінансові аспекти) та способи, якими він може трансформувати практику викладання та навчання мов за умови готовності як викладачів, так і здобувачів освіти до використання ШІ.*

**Ключові слова:** *штучний інтелект, ChatGPT, англійська мова як іноземна, англійська мова за професійним спрямуванням, навчальне середовище, готовність до використання ШІ, агротехнічні ЗВО.*

**Introduction / Вступ.** AI is a major technological change of the 21<sup>st</sup> century, which is able to transform teaching and learning practices in the next couple of years. The digital world is an integral part of our lives and it is a necessity to keep up with this AI revolution. Using AI, which is embedded in numerous tools, is becoming a 21<sup>st</sup> century job skill. Thus, educational systems should learn to deal with the changes and develop proper strategies in order to integrate AI technologies into teaching and learning practices (EDUCAUSE, 2023).

Using AI can enhance language learning experience and teaching practice and contribute

significantly to achieving communicative competence and fluency, since its incorporation correlates with current best practices in teaching English as a Second Language (ESL), such as communicative language teaching, interactive task-based learning and technology-supported approach (Hatmanto, Sari, 2013). However, AI technologies have their benefits and limitations that educators should be aware of in order to incorporate ChatGPT and other AI tools and platforms into the educational process.

ChatGPT, which emerged into the public in November 2022, is one of the forms of AI designed for language understanding and able to perform conversation-like interactions. It can be defined as a system which has the capacity to process data and information in a way that resembles intelligent behaviour, and typically includes aspects of reasoning, learning, perception, prediction, planning or control (UNESCO, 2023, p. 10). Scientists and officials all over the world has been working on the development of strategies and regulations to use AI (Baidoo-Anu, Owusu Ansah, 2023, Fiialka, et al., 2023). ChatGPT for language teaching and learning has been investigated in terms of its opportunities and challenges (Kohnke et al., 2023, Hockly, 2023, Hong et al., 2023, Rudolph et al., 2023). Based on literature review, it can be assumed that AI tools, such as ChatGPT for English as a Second Language teaching and learning can effectively support language learners and ESL teachers in a number of ways. However, the application of ChatGPT has not been regulated in most institutions and AI integration strategies should be developed in order to provide the efficiency of its application for language teaching and learning and address the arising problems and concerns.

**Aims and Tasks / Мета та завдання.** This paper is aimed at investigating the application of ChatGPT as a tool for ESL and ESP teachers and students at agro-technical higher educational institutions. It has been considered in terms of its application to localize content, personalize materials, develop language skills and soft-skills, introduce profession-specific learning materials and create a comfortable learning environment during the ongoing war in Ukraine. In this context, educators' AI readiness has been considered as well.

**Methodology of Research / Методологія дослідження.** In order to solve the set tasks, the following methodology was applied during the research. First of all, the concept of ChatGPT in terms of teaching English as a Second Language has been defined by conducting the available research literature overview.

Secondly, based on the insights from the literature review, personal teaching experience as a case study has been incorporated in order to observe the impact of the changes and reflect on the outcomes.

AI technologies have been incorporated into teaching ESL and ESP courses within the period and one semester (September through December) in Separated Subdivision of National University of Life and Environmental Sciences of Ukraine «Berezhany Agrotechnical Institute», Berezhany, Ukraine. The courses were taught to students majoring in the following specialties: «Mechanization of Agriculture», «Agronomy», «Forestry», «Park and Gardening», «Ecology», «Power Engineering», «Management of Agricultural Enterprises» with the total number of student being 242.

Implementation of AI tools, such as ChatGPT was considered in terms of content creation, interactive practice of language skills and soft skills as well as tailoring assessment. The students' academic performance has been evaluated and compared by applying valid assessment procedures, surveys and observation.

**Results / Результати.** Currently, according to various surveys (Kacper Łodzickowski, 2024), 75% students use ChatGPT. Although educators feel uncertain about the innovation, they are quite optimistic and ready to learn in order to be productive.

In terms of using AI in teaching ESL and ESP, the paper addresses its possibilities of transforming in and out of class teaching and learning practices in the next couple of years by the example of its application in the language courses taught for students majoring in agro-technical specialties.

When developing and teaching a course of ESL or ESP course, a teacher is responsible for deciding what to teach at two levels. First of all, it's choosing a curriculum, that is to say putting different components into a system taking into account each individual learner or a specific group. Secondly, a teacher decides how to teach and how to learn.

According to the information obtained from attending recent conferences and teacher talks devoted to using AI technologies in the language classroom as well as based on the author's own experience the following conclusion can be drawn. Although it takes minutes to create a lesson plan and prepare lesson materials, due to currently available high-quality ESL, ESP and Business English courses provided by Pearson, Oxford, Express Publishing etc., which include a student book, a workbook, a teacher's book, a set of extra activity worksheets, test papers, culture notes and much more both in digital and paper formats for all age groups, the best option is to implement these resources according to learners' language levels and needs following the scope and sequence. However, AI based technologies are highly effective to prepare extra lessons and additional materials to support particular learners' needs (e.g. simplify the content for a certain CEFR level, tailor assessment, create flashcards and presentations,

provide interactive speaking practice etc.) and to localize the available materials provided by international publishing houses, according to the needs of a specific specialty, region and future professional activity requirements.

Having assumed that applying AI technologies at the stage of ESL and ESP additional course material preparation and lesson planning can be effective and time-saving, we have considered a number of options that can be used. It is possible to improve lesson planning, content creation and develop the activities according to the curriculum, learners' needs of a certain group and current course requirements.

According to a specific educational-professional program, a language teacher of agro-technical higher educational institution has to develop a course program and materials to meet the required competences and expected specialist's knowledge and skills. Such a course program includes three main components to be taught: general English (B1-B2 level), English for Specific (Professional) Purposes according to a certain specialty, and Business English.

As it has been stated above, the main focus of this paper is to investigate on how to support and localize the existing international ESL and ESP course sets to the needs of students majoring in agro-technical specialties with the help of AI tools application.

Thus, it is to the point to consider the following options.

According to the program requirements for a specific specialty, ChatGPT may be applied to provide efficient vocabulary practice. First of all, the tool can be used to create a list of vocabulary on a specific topic together with its translation, definitions, collocations and the examples in various contexts in the form of sentences, short texts, dialogues etc. Using effective prompts, it is possible to obtain a highly-specialized vocabulary list and contextualize it, taking into account the specific needs, the level etc. In addition, it is possible to create various activities to support vocabulary practice, for example categorization, gap-filling and matching exercises, multiple choice questions, quizzes (e.g. for Kahoot), Quizzlet flashcards etc.

Based on personal teaching experience during the case study on ChatGPT, it has been highly effective to contextualize grammar together with specialized vocabulary in the process of teaching ESP courses by providing real-life examples and situations. For example, students have been working on particular job interview questions practicing speaking, developing soft skills and practicing Present Perfect and Past Simple or they have been preparing farm equipment orders and field planning forms localized for a specific region practicing writing skills, active vocabulary use and Future forms.

Furthermore, the program required active vocabulary and grammar material may be practiced effectively with the help of various AI tools. ChatGPT is able to incorporate the material into further reading and listening practice, that is to say, generate a text containing the specified vocabulary and grammar forms at the appropriate CEFR level on various topic, taking into account local peculiarities. Moreover, an educator may have ChatGPT generate comprehension questions of various types, e.g. multiple choice, true/false, critical thinking etc., which may be helpful to compliment the textbook.

As for speaking practice, AI tools have been considered as a way to significantly increase oral communication and overcome a lot of challenges students face when developing their speaking skills. Using ChatGPT or custom AI provided by international textbooks (e.g. Speak Out, C part), (Pearson, 2024) you can practice speaking anywhere and anytime having immersive interactive experience. Students' receptive skills are usually higher than productive skills and having more speaking practice is crucial. Some students get stresses when speaking in public and having AI as a speaking partner can contribute to more frequent oral communication. In addition, there is the so called «plateau» when students gain the level, which allows them to communicate their ideas and express their needs, and AI can be very helpful to introduce the use of new language structures and push them out of their comfort zone. Thus, teachers may use ChatGPT to generate speaking prompts and scripts and ask students to act out various scenarios, for example, ordering certain equipment for a farm, complaining about the service, discussing working conditions etc. It is quite helpful to record conversations by copying and pasting them to a text-to-voice software (e.g. Voicemaker), so that students can play them, pause, repeat, analyze and improve. Although ChatGPT is very helpful to practice speaking in real life conditions, the role of a teacher to ensure the appropriate structure of such activities, that is to say preparation (key vocabulary and structures), controlled practice itself, feedback and improvement.

As for students' written assignments and translation, there are a lot of concerns from educators. The biggest one is cheating. Learners' should be taught that we live in the age of deep fakes and it is important to make judicial choices and use AI as a tool without relying on it completely. ChatGPT sounds quite authoritative providing its answers. As for translation, it is not a hundred per cent perfect, but as it is critically evaluated, framed and used properly, it is highly beneficial. ChatGPT is able to produce a very cohesive and accurate writing. Using AI tools, such as Crammarly, it is possible to make your text correct in terms of the mechanical aspects. Despite of all these benefits, such writing lacks

soul.

It is not to the point to ban AI in order to reduce copying and cheating but it is crucial to motivate and encourage learners to produce their own writing and teach students how to make judicious choices when using ChatGPT. Learners should be explained that it is not effective to copy and paste. This tool can generate ideas and writing prompts that can be used for further creative writing. Having a certain topic to cover or a few keywords, ChatGPT can provide prompts for an essay, a formal/informal letter, a report etc., which students can use to produce their own text in their own style. This kind of work has proved to be effective in order to demonstrate practical usage of ChatGPT as well as to push responsibility to students for both content and management.

Another option, which has been quite motivating for the students taking part in this research, is the possibility to assess and improve their own writing using ChatGPT. Students may write their own essay to cover a certain topic having clear criteria and CEFR level and ask ChatGPT to do the same. Here, students can compare the content, the structure, the use of vocabulary and grammar in order to improve the quality of their writing.

The last but not least, ChatGPT may be used to tailor assessment. It is definitely to the point to ease teachers' workload by having ChatGPT to create various assessment tasks on a specific topic, for example, critical thinking, multiple choice, true/false, gapped sentences etc. The tool may be helpful to assess writing according to specified criteria and generate feedback. Here, the educators should pay attention to the results of such assessment provided by ChatGPT, since it cannot ensure personalized approach to giving feedback, may contain mistakes and, thus, requires reviewing.

Hence, AI tools like ChatGPT can significantly enhance language learning and should be considered as an additional time-saving tool and support for educators and learners. Teachers need to be aware of how AI can help in classroom and ease their workload. To sum up, currently, AI tools like ChatGPT have been considered effective to prepare teaching materials, content and practical tasks taking into account specific requirements and personalized students' needs, to help grading students' written assignments, to practice multi-skills and social use of language.

However, there are a lot of problems and concerns about using AI tools for educational purposes. The first one, which have already been mentioned above, is copying and cheating, since ChatGPT does not provide any sources or citations (or it can create false references) together with its responses. That is a path to plagiarism. Although there are ChatGPT trackers available (e.g. Turnitin, GPTZero etc.), none of them is considered reliable enough not to provide false responses and to be used to officially prove plagiarism. Moreover, there are programs to trick those trackers. Thus, it is to the point to practise defending written assignments by speaking, that is to say, asking students to demonstrate practical usage of the material learnt. The second drawback is another digital divide that can cause educational inequities. That is because high-speed Internet connection, access to advanced versions of ChatGPT or customized AI cost money. Bias in AI is another concern as the information usually comes from Western perspective and other communities are less represented. It is important to use critical thinking and remember that ChatGPT is good at form but can be bad at content.

Reacting by banning is not the best way to address the issues with ChatGPT. It is better to control and develop the use of AI tools rather than punish. However, there is obviously a need to manage these drawbacks in order to use AI tools in ways that are pedagogically beneficial and ethical. It is to the point to consider specific competences teachers need to successfully use AI technologies, such as ChatGPT in their work. According to Instefjord and Munthe (2017), the digital competences include three components. The first one is technological proficiency, that is to say they need to understand how ChatGPT works, be able to construct effective prompts to interact with AI tools and facilitate learning tasks as well as stay up-to-date with the changes. The second one is pedagogical compatibility, meaning teachers' ability to plan the ways and strategies to use AI technologies and implement the tasks in classroom as well as guide the learners to use AI technologies for self-directed and life-long learning. Finally, social awareness is important in order to use AI tools in the ways that are beneficial and ethical. Here, teachers should be aware of the drawbacks of AI tools when implementing them in classroom as well as inform the learners of the possible risks and ethical issues. Hence, there is a need to improve students' digital competence (Jones and Hafner, 2022), focusing on both acquiring basic technological proficiency and learning to use AI-driven safely and with integrity.

**Discussion / Обговорення.** It is important to understand that AI is not a threat to teachers, because the impact of a teacher on learners' motivation is difficult to replicate. In order to gain AI readiness, lecturers should be aware of how AI can help in classroom, for example, ease their workload and prepare materials, content, help with grading, personalize students' needs, practise multiskills etc. In order to provide AI readiness, educators should experiment with AI themselves, discuss its possibilities with colleagues, read and learn about AI and stay involved as much as possible. However, AI integration strategies should be thoroughly considered and regulated in the near future.

**Conclusions / Висновки.** The importance of human interaction in the educational process is irreplaceable. Technology cannot replicate a teacher, who is able to motivate, encourage, provide personalized approach, feedback and emotional connection. Here, educators should not be afraid of AI and be aware of how it can help in the classroom.

There has always been concerns, worries and anxiety from educators with the development of new technologies. However, as soon as both educators and learners accept this technological innovation and learn to use it properly in the process of language education, they may obtain positive experience and benefits.

Teachers of ESL and ESP at agro-technical higher educational institutions may use the possibilities of AI in order to ease their workload in terms of lesson planning, content creation, assessment etc. and create an engaging learning environment, taking into account specific learning needs, local and profession specific requirements. Here, attention should be paid to the development of teachers' and students' AI readiness as well and the development of new digital competences.

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