EXPLORING THE IMPACTS AND TECHNIQUES OF TEACHING WITH ARTIFICIAL INTELLIGENCE TOOLS

Abstract. In the modern world, technologies are developing rapidly, which leads to the emergence of various learning tools. In recent years, artificial intelligence (AI) has become popular due to its ability to perform very complex assignments, such as analyzing information, complex calculation, proving mathematical tasks, solving problems and describing the results of research. Some programs have reached the level of human knowledge in various fields, such as medicine, computer search systems and text analysis. The integration of artificial intelligence technologies in the global process, especially language learning, is becoming more and more relevant due to the insufficient effectiveness of traditional teaching methods. In this article, the authors analyze the impact of artificial intelligence, especially GPT tools, on learning. The most influential programs and programs that contribute to the development of necessary skills are highlighted, as well as the importance and prospects of improving language teaching methods are discussed. Legislative changes, such as the EU Artificial Intelligence Act and the Concept of artificial intelligence development in Ukraine, indicate the need to regulate the use of AI in the educational process. These innovations contribute to the systematization and optimization of the use of AI in education. Igor Sikorsky Kyiv Polytechnic Institute created a normative document on the use of artificial intelligence for academic activities, which defines the main principles and
regulations regarding the use of artificial intelligence. This document was developed for university students and teachers in order to regulate the use of artificial intelligence resources. The University recognizes methods that violate the principles of integrity and ethics as academically dishonest. The main provisions regarding the use of artificial intelligence models in the academic field and the list of recommended services for learning highlight the opportunities and problems associated with the introduction of artificial intelligence in the educational process. Artificial Intelligence offers transformative tools to enhance English language learning by providing a dynamic and personalized educational experience. Advanced models such as ChatGPT simulate real-world conversations, offering students valuable opportunities for interactive language practice. AI tools like Grammarly provide instant grammar feedback, improving students' writing skills, while platforms like Scholar expand vocabulary with contextually relevant word suggestions. Learning platforms like Knewton analyze individual learning patterns to design personalized learning paths. GPT-based programs like Babbel improve understanding of social contexts and informal expressions, while Duolingo integrates artificial intelligence for engaging and adaptive lessons. AI-powered speech recognition tools like Google Cloud Speech-to-Text evaluate pronunciation and provide feedback, while real-time translation tools like DeepL help with understanding. In addition, illustrative materials created by artificial intelligence diversify learning methods, making the learning process more exciting and effective.

**Keywords:** digital learning, language learning, teaching methods, legislation, skill development, regulation in education, learning services
Анотація. Технології сучасного світу розвитку дуже стрімко, що стало можливим з’явою різноманітних засобів навчання. Сучасний інтелект (ШІ) є тепер досить популярним, оскільки здатність виконувати комплексні завдання, такі аналітичний збір інформації, складні обрахунки, перевірка математичних рівнянь, розв’язання задач і опис результатів експерименту. Було створено деякі програми, які вже мають рівень людських знань у різних галузях, таких як медицина, комп’ютерні пошукові системи та аналіз тексту. Створення технологій штучного інтелекту для оптимізації освітнього процесу, особливо вивчення іноземних мов, стає все більш популярним, тому що відповідні методи не мають достатньої новизни. У цій публікації автори аналізують вплив штучного інтелекту, особливо інструментів GPT, на навчання. Висвітлено найвпливовіші програми, що сприяють розвитку необхідних навичок, а також обговорено важливість і перспективи вдосконалення методики навчання мови. Нормативні законодавчі положення, такі як Акт Європейського Союзу про штучний інтелект та Концепція розвитку штучного інтелекту в Україні, вказують на необхідність регулювання використання штучного інтелекту в освітньому процесі. Ці нововведення сприяють систематизуванню та оптимізації використання цих ресурсів в освіті. У КПІ ім. Ігоря Сікорського створено нормативний документ щодо використання штучного інтелекту для процесу навчання, який визначає основні принципи та положення щодо особливостей використання штучного інтелекту. Цей документ розроблено для студентів і викладачів вищих навчальних закладів з метою регулювання використання ресурсів штучного інтелекту. Університет визнає методи, які порушують принципи доброчесності та етики, академічно нечесними. Основні положення щодо використання моделей штучного інтелекту в науковій сфері та перелік рекомендованих сайтів для навчання висвітлюють можливості, пов’язані з впровадженням штучного інтелекту у процесі навчання. Штучний інтелект пропонує новітні трансформаційні та інноваційні інструменти для покращення вивчення англійської мови, надаючи динамічний та персоналізований освітній досвід. Просунуті моделі, такі як ChatGPT, імітують розмови подібні до розмов людини в реальному світі, пропонуючи студентам чудові можливості для інтерактивної мовленньової практики. Інструменти штучного інтелекту, такі як Grammarly, забезпечують миттєвий граматичний зворотний зв’язок, покращуючи навички письма студентів, тоді як платформи, такі як Scholar, дозволяють розширювати словниковий запас за допомогою контекстально відповідних слів. Навчальні платформи, такі як Knewton, аналізують індивідуальні шаблони навчання, щоб розробити персоналізовані шляхи навчання. Програми на основі GPT, такі як Babbel, покращують розуміння
sozialnykh kontekstiv i neformalnykh vyslovlyovanii, todi' nach Duolingo integruje shhtuchniy intellekt dla zakhoplyuychikh interaktivnych zanyt'. Instrumenti rozpiznavania movleniya na osnovi shhtuchnogo intellektu, takii nach Google Cloud Speech-to-Text, otsineny vymovu i nadai vydigi, a instrumenti perekladu v real'nomu chas'i, takii nach DeepL, dopomagai' z perekladom. Krim того, stvoreni shhtuchnim intellektom il'ustrativni materiali ur'iznomani'inoi' metodyi nadvannya, robl'chii osv'tniiy proces bi'lish sushchnym i te's'effektnym.

Kluch'vii slova: цифровое навчання, вивчення мов, методи навчання, законодавство, розвиток навичок, регулювання в освіті, учбові ресурси

Introduction. Technologies develop very quickly, and every year new tools for learning appear. In recent years, artificial intelligence, which has many possibilities, has become widespread. Now artificial intelligence can perform extremely complex tasks, such as proving mathematical theorems, thinking, solving problems, describing research, etc. Some programs have reached the level of human knowledge in fields as diverse as medicine, computer search engines, and text analysis.

The integration of smart classroom teaching and artificial intelligence (AI) technology is proposed to enhance language learning experiences. Traditional teaching methods have been found to be less effective in achieving desired learning outcomes, necessitating innovative approaches [1].

Researchers study the most influential applications and programs that contribute to the development of teaching English electronically and their effectiveness in developing e-learning will be reviewed and concluded that there are applications of artificial intelligence in teaching English, which are of great importance and a great future in the developing of language teaching [2].

The purpose of the article is to consider the use of artificial intelligence tools for learning, particularly analyzing GPT tools and their impact on English teaching practices.

Main part. The integration of artificial intelligence tools into educational practice is rapidly spreading. Students and lecturers master the services, learn new possibilities and qualities. Such a rapid development requires the development of new regulations and clarifications that systematize the educational process.

On March 13, 2024, the European Parliament formally adopted the EU Artificial Intelligence Act. The AI Act is the world's standalone law administering AI, and a point of interest piece of enactment for the EU [3]. As the world's to begin with standalone enactment devoted to administering AI, the AI Act speaks to a proactive approach by the European Union to address the moral, lawful, and societal suggestions of AI innovation. This point of interest piece of legislation points to set up clear rules and measures for the improvement, sending, and utilization of AI frameworks over different segments, counting healthcare, transportation, fund, and open administrations. By advancing straightforwardness, responsibility, and human-
centric AI, the EU looks to cultivate advancement while defending crucial rights and values.

Ukraine adopted the Concept of Artificial Intelligence in 2020. This Concept defines the goal, principles and objectives of developing artificial intelligence technologies in Ukraine as one of the priority areas in the field of scientific and technological research [4]. The following terms are used in this Concept:

Artificial intelligence is an organised set of information technologies that can be used to perform complex tasks by using a system of scientific research methods and algorithms for processing information received or independently created during work, as well as to create and use own knowledge bases, decision-making models, algorithms for working with information and determine ways to achieve the tasks.

Artificial intelligence industry is a field of activity in the field of information technology that ensures the creation, implementation and use of artificial intelligence technologies. Ways and methods of solving problems according to the main directions of national policy in the field of higher education: creation of specialized educational programs on artificial intelligence in the direction of "information technologies" and including of artificial intelligence topics in other educational programs; creation of interdisciplinary programs, including joint programs, master's and doctoral programs with various disciplines; involvement of different type of specialists in the formation of qualification requirements for specialists in artificial intelligence, development and implementation of educational programs, certification of applicants of higher educational institutions; integration of advanced online AI courses into curriculum; organization and provision of internships for IT teachers in IT companies as well as state institutions that develop and apply artificial intelligence technologies; creation of international cooperation programs in the field of artificial intelligence, including cooperation with foreign partners [4].

Currently, universities and institutes create their own provisions and concepts that determine the procedure for using artificial intelligence in the educational process.

National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute has developed regulations on the use of artificial intelligence for academic activities [5]. The university recognizes such methods of using AI models as academically dishonest, which violate the principles of integrity and ethics, research. Among the main provisions are the following:

- Publishing AI-generated text or AI-paraphrased content from other sources as your own work. The use of AI for automatic text generation or paraphrasing of existing content belongs without indicating the source, violates the principles of authorship and is confirmed by plagiarism.

- AI reworking of the author's own article with an order to republish it as a new article. Using AI to transform an author's already published work for the purpose of creating a new publication violates the University's Honor Code and self-identification in scholarly work.
Creating false data and presenting it as proof of research ownership (data fabrication). The generation of false data by AI and its use as a basis for scientific conclusions is a serious violation of academic integrity and can cause negative consequences for the quality of research and the reputation of the researcher.

A list of services that can be useful in the learning process is recommended [5] (See Table 1).

**Table 1.**

**List of Artificial Intelligence Tools that can be used for teaching foreign language**

<table>
<thead>
<tr>
<th>Artificial Intelligence Tool</th>
<th>Description</th>
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<tbody>
<tr>
<td>ChatPDF</td>
<td>The service analyses PDF documents and articles. (<a href="https://www.chatpdf.com">https://www.chatpdf.com</a>)</td>
</tr>
<tr>
<td>Deep AI</td>
<td>A generative chatbot with artificial intelligence. It can imitate a dialogue, answer questions, admit mistakes, deny incorrect and reject inappropriate requests. (<a href="https://deepai.org">https://deepai.org</a>)</td>
</tr>
<tr>
<td>Google Bard</td>
<td>A tool based on Google's conversational artificial intelligence model. (<a href="https://bard.google.com">https://bard.google.com</a>)</td>
</tr>
<tr>
<td>Canva</td>
<td>An online graphic design tool that allows you to create social media posts, presentations, posters, videos, etc. (<a href="https://www.canva.com">https://www.canva.com</a>)</td>
</tr>
<tr>
<td>Scribbr</td>
<td>The service has built-in tools for proofreading and editing text, and plagiarism checker, as well as a free bibliographic reference generator. (<a href="https://www.scribbr.com">https://www.scribbr.com</a>)</td>
</tr>
<tr>
<td>Grammarly</td>
<td>It is a service for spell checking, improving the style, grammar and consistency of the author's text. Registration is required. (<a href="https://www.grammarly.com">https://www.grammarly.com</a>)</td>
</tr>
<tr>
<td>DeepL Translator</td>
<td>A service that uses artificial intelligence to translate text and documents. It corrects grammatical and punctuation errors. (<a href="https://www.deepl.com">https://www.deepl.com</a>)</td>
</tr>
<tr>
<td>AcademicGPT</td>
<td>A service designed for researchers that allows users to create annotations and receive feedback on different sections of the uploaded work. (<a href="https://academicgpt.net">https://academicgpt.net</a>)</td>
</tr>
</tbody>
</table>

Artificial intelligence has significant potential and can be applied in various areas of academic activity of teachers, students, postgraduates, scientists to facilitate learning, teaching and research, for example, for [5]:

- personalized learning, when machine learning algorithms are used to create individualized learning programs that take into account the needs and level of knowledge of each student or provide their needs for additional support;
- automating the process of task evaluation, reporting and analysis of educational achievements;
- development of virtual assistants for training (chat-bots) that can answer questions, provide support and help in solving tasks;
creation of immersive educational environments that facilitate understanding of complex concepts;

gamification of the educational process;

automation of research processes, when AI tools help analyze large volumes of information, helping to identify new trends that may go unnoticed with traditional methods, which greatly facilitates research;

development of new hypotheses;

presentations of research results, as text generation algorithms can help scientists organize and annotate scientific articles and reports.

Different types of tasks can be created using artificial intelligence tools.

- Utilize cutting-edge tools like ChatGPT to simulate practical conversations, providing students with valuable opportunities for interactive English language practice.

- Develop students' speaking skills using artificial intelligence. In English lessons, you can be given the task of discussing certain issues with artificial intelligence. There are some helpful resources, some of which are completely free. (https://demo.hume.ai/)

- Utilize GPT models such as Grammarly for instant and accurate grammar feedback, helping students refine their grammar and overall writing skills.

- Enhance students' vocabulary using GPT tools like Scholar, which offers synonyms, antonyms, and contextually relevant word suggestions. Implement educational platforms like Knewton that integrate GPT models to analyze individual learning patterns and provide personalized English language learning paths.

- Explore GPT-driven platforms like Babbel to gain insights into social context and informal expressions, improving language learning experiences. Engage students with interactive lessons on platforms like Duolingo, which incorporate GPT models to create dynamic and responsive English language learning experiences.

- Use artificial intelligence to create illustrative material that will help diversify the educational process.

- Utilize GPT tools with speech recognition, such as Google Cloud Speech-to-Text, to assess pronunciation and provide valuable feedback on spoken English. Enhance comprehension with GPT tools like DeepL that offer real-time translation, facilitating understanding and overcoming language barriers for English language learners.

Conclusion. In recent years, the use of artificial intelligence tools in education has increased. Artificial intelligence has many advantages for use in the educational process. As far as using artificial intelligence in pedagogy is concerned, well the advantages are numerous. Therefore, teachers and students find it quite useful. It is also used by the management of education as an additional tool. Despite all the advantages that artificial intelligence can bring to education, there are concerns over the possible harm that it might cause in the same field.
References:


Література:


