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THE ANALYSIS OF THE USAGE OF AI SERVICES FOR TEXT GENERATION IN HIGHER EDUCATION

The extremely rapid development of artificial intelligence (AI) has significantly transformed the methods and principles of tasks and study material creation in the educational system in general and in higher education in particular. AI-powered tools such as ChatGPT, Writesonic, Grammarly, Voicebooking, and AI Studio have become widely used in task formation, academic writing, research, content summarization, and accessibility solutions. These tools use natural language processing (NLP) and machine learning algorithms to assist students and teachers in producing well-structured, high-quality texts while improving the efficiency and productivity of education.

The article presents a comprehensive analysis of AI text generation services and their applications in modern higher education. The five prominent AI tools were evaluated with an emphasis on the characteristics, advantages, and disadvantages of their assistance in academic assignment creation. A comparative analysis explores their effectiveness in generating coherent content, refining writing style, detecting grammatical errors, summarizing research papers, and enhancing accessibility through text-to-speech capabilities.

The survey of scientific sources depicts the present scholarly discussion about AI-driven text generation services. Important topics studied in them include how AI may improve academic writing, how it might offer individualized learning experiences, and ethical issues including data privacy, plagiarism threats, and excessive dependence on AI-generated content. Even while AI-powered tools have many advantages, questions remain about how they may affect students' critical thinking and academic integrity. While AI-powered tools offer tremendous benefits and advantages, concerns remain regarding their impact on academic integrity and critical thinking skills.

In order to illustrate AI's adaptability at modern higher educational institutions, the study also includes the search of its usage in administrative duties, research support, and accessibility. To ensure ethical and successful adoption, educational institutions must create explicit rules for responsible AI usage and incorporate AI literacy into the curriculum as AI text generation continues to develop and advance. By providing insights into the long-term effects of AI on education and academic integrity, this study adds to the continuing conversation about the technology's potential and difficulties in higher education.

Key words: artificial intelligence, AI text generation, higher education, AI-powered writing tools, natural language processing.

Problem statement. Text generators, neural networks, natural language processing (NLP), and artificial intelligence (AI) tools have become widely popular since the global launch of ChatGPT in 2022. And although the chatbot still remains one of the most widely used and discussed, today there is a wide range of other large language models that offer text-writing functions and more. AI-driven tools use machine learning algorithms to generate, edit, and process text efficiently. These technologies have significantly changed content creation, making it possible to produce high-quality written materials much faster than a human writer.

The growing usage of AI-powered text-generating tools in higher education has caused several challenges that have to be properly studied and overcome. While artificial intelligence improves efficiency, productivity, and accessibility, at the same time it also is a threat to academic integrity, ethical consequences, and the possibility of overreliance on AI-generated data. One big issue is that students may become reliant on AI-generated literature, resulting in a loss of critical thinking, creativity, and analytical skills.

Furthermore, issues such as plagiarism, intellectual property rights, and data privacy present significant challenges to the ethical and responsible use of artificial intelligence. Another important concern is the disparity in AI literacy among students and teachers. Not all teachers and students have enough knowledge and skills to effectively use AI while maintaining academic integrity. The absence of clear institutional guidelines on AI usage may result in variable application across disciplines, potentially leading to misuse or misunderstanding of AI-generated content.

Besides, while AI tools such as ChatGPT and Writesonic improve academic writing, they still struggle with context comprehension, logical structure, and citation accuracy. It is important to critically examine limitations of any AI-generated text to determine its reliability as a supplemental tool rather than a replacement for traditional academic skills. Addressing these challenges is crucial to ensuring that AI tools serve as useful educational aids rather than threats to academic quality and ethical standards.

Analysis of recent research and publications. The use of artificial intelligence in composing texts in higher education has come under huge criticism in research. A review of modern scientific publications indicates common themes such as AI's impact on academic writing, ethics, and efficiency as an educational tool [Treve M.]; [Rudolph J.]; [Tan S., Tan S.]. There are, for instance, studies that have summarized that AI can improve academic writing by offering grammar checking, paraphrasing support, and citation suggestions. AI writing tools like Grammarly and ChatGPT were shown to improve writing coherence and readability, especially for non-native English language speakers [Dempere J., Modugu K., Hesham A., Ramasamy L. K.], [Wang C.].

Ethical concerns related to AI text generation include plagiarism detection, data privacy, and the overreliance of students on AI-generated content. Recent research warns that AI tools may inadvertently encourage academic dishonesty if not properly regulated [Mulaudzi L. V., Hamilton J.].

Studies indicate that AI can be a valuable aid in personalized learning. AI-generated feedback helps students refine their writing and develop critical thinking skills [Lawasi M. C., Rohman V. A., Shoreamanis M.]; [Malik A. R., Pratiwi Y., Andajani K., Numertayasa I. W., Suharti S., Darwis A., Marzuki N.]. However, educators stress the importance of maintaining a balance between AI assistance and traditional academic skills development [Werdiningsih I., Marzuki N., Rusdin D.].

The purpose of the article. The article compares AI text services, examining their different features, inherent strengths, inherent weaknesses, and daily, real-world applications in higher education and some other activities. By critical evaluation of these tools, we aim to give readers a comprehensive idea of how each service fulfils different user needs and allow them to make effective decisions on the deployment and selection of AI-powered text solutions. We examine not only their technical skill but also the ethical considerations and potential impact on education.

Main material. Nowadays AI text services are used for various purposes, including academic writing, creative content development, business communication, and marketing. The integration of artificial intelligence into text generation and processing offers many advantages. Among the main benefits of using AI for text writing are:

−   increased productivity, because the speed of creating a full-fledged text is really amazing. To get the best result, it is important to provide as detailed and precise request as possible and send it. While the neural network is creating the text, you can pay attention to more important tasks like

content planning, strategy development, or a coffee break. Thus, this speedup in content creation not only saves time but also enables quick response to rapidly changing educational demands;

– getting a high-quality result. Most modern neural networks are capable of generating text adapted to the specific style and tone of voice. Additionally, they have built-in tools for checking grammar and spelling, which minimize errors and simplify the process of editing and final proofreading of the text. This results in error-free content that enhances the credibility and professionalism of created educational resource;

– wide range of applications. An AI generator will help to solve any problems related to text: be it creating an attractive title or writing long-form articles and comprehensive reports. Usually, the functionality of these tools is only by the user's imagination and the specific features offered by the service. This adaptability makes AI a useful asset for diverse content creation needs.

– search for inspiration. Whether you have no ideas for a future article or for the next lesson, or you have done half of the work, and then there is no way to continue, in any case, a neural network that writes texts will come to the rescue and "ignite" your creative spark.

While ChatGPT remains today one of the most widely recognized AI language models, other tools such as Writesonic, Grammarly, Voicebooking, and AI Studio also propose unique capabilities according to different user needs. Let's analyse them.

Thus, Voicebooking is an AI-powered tool primarily designed for text-to-speech conversion, enabling users to generate high-quality voiceovers in both male and female voices. The free version of Voicebooking offers limited access, while the paid version expands its functionality to include voiceovers for videos and the creation of storyboard-based audio recordings. This makes it particularly useful for e-learning, audiobook production, and accessibility-focused applications. Among the key features of Voicebooking the following can be named: AI-powered text-to-speech conversion; voice customization options (male/female voices); integration with multimedia content creation; limited free access, with expanded features in the paid version.

ChatGPT, developed by OpenAI, is one of the most advanced AI text generation tools available nowadays. Built on the GPT-3.5 and GPT-4 architectures, ChatGPT is capable of generating human-like texts, answering questions, summarizing information, translating languages, and assisting in business and academic tasks. Its adaptability to different contexts and ability to tailor responses make it an essential tool for writers, researchers, and professionals. The key features of ChatGPT are the following: advanced text generation using natural language processing algorithms; high-quality editing, summarization, and paraphrasing; ability to generate creative content such as poetry, essays, and scripts; support multiple languages; user-friendly interface and integration with various applications.

The quality of results are like these: ChatGPT creates, edits and paraphrases English text well, and translates into English well but not so well into Ukrainian (needs editing). AI creates tests for students not bad, but they also need to be edited. It creates tables well. One of the most important features of ChatGPT is its ability to adapt to specific contexts, making interactions more personalized and engaging. ChatGPT demonstrates the latest AI capabilities, creating responses that closely resemble human language. It works with the vast majority of languages and has an intuitive service interface.

In the educational sphere the platform's customization options allow users to tailor responses to their specific requirements and use cases. A convenient service that significantly saves time for performing everyday tasks. It performs the function of editing, and paraphrasing the translation into English qualitatively, which greatly facilitates routine work. Although the function of creating tests requires editing, it is also a powerful auxiliary tool in creating educational material.

As for Writesonic, it is an AI-powered writing assistant that specializes in long-form content generation. The neural network is based on the Article Writer 6.0 algorithm and also synchronizes with scientific articles and research in Google search in real time. Thanks to this, the final version contains relevant and accurate information compared to other tools working with older AI models. It is particularly useful for researchers, bloggers, and marketers who require high-quality articles, reports, and social media content. Writesonic stands out due to its real-time synchronization with Google search, ensuring that generated content is relevant and up-to-date. However, its complex pricing structure and focus on long-form content may make it less suitable for users seeking quick and simple text generation. Among the key features of Writesonic are the following:

long-form content creation, including blog posts and research articles; real-time access to the latest online information via Google search; multilingual translation capabilities; a variety of pricing plans to cater to different user needs; audio-to-text and text-to-audio conversion.

As for the quality of obtained results we may sum up that it quickly creates, summarizes text, paraphrases English text fairly well, creates a text-based test, but very simple, creates questions to the text well, highlights key components and provides examples, and explains certain queries on the topic.

Overall review of the service states that this AI service performs many functions and prompts based on Chatbot. Tests which it creates need to be improved. Giving simple explanations, highlighting key components, and theses, providing examples upon request is similar to the functions of ChatGPT. Thus, this AI is useful in educational activities.

Grammarly is a widely recognized AI-based writing assistant designed to enhance the clarity, correctness, and engagement of written content. It identifies grammatical errors, suggests style improvements, and provides real-time writing feedback. The premium version includes a plagiarism checker, making it particularly useful for academic and professional writing. The key features of Grammarly are: real-time grammar and spelling correction; stylistic and tone adjustments; plagiarism detection (in the premium version); integration with Microsoft Word, Google Docs, and web browsers; AI-powered writing suggestions and templates.

As for the quality of results, it quickly and efficiently edits text, corrects errors in words, punctuation, and provides a report. Overall opinion about the service is that Grammarly helps to write clear text without errors. Grammarly uses artificial intelligence to detect and correct grammatical, spelling, punctuation, and stylistic errors in the text. It can also help improve the content by offering alternative options for words, phrases, and sentence struc-

tures. Grammarly identifies and corrects grammar errors, spelling mistakes, and punctuation issues in real time, helping users avoid common writing mistakes. The premium version of Grammarly includes a plagiarism checker that alerts users to potential instances of unoriginal content and ensures the authenticity of their writing. It provides writing templates and generates text based on the user's input and desired writing styles, making it an ideal writing assistant.

Grammarly provides users with real-time suggestions and corrections as they type, ensuring that their written content is correct, error-free, and well-formatted. It caters to a wide range of writing needs: different types of documents, emails, essays, social media posts, professional documents, etc. Grammarly can be integrated into popular platforms such as Microsoft Word, Google Docs, and various browsers, making it accessible across a variety of writing environments.

AI Studio is an AI-powered assistant that focuses on converting text into voice and creating AI-generated avatars for video content. This tool is particularly beneficial for language learners, teachers, and digital marketers looking to create interactive and engaging multimedia content. The key features of AI Studio are: AI-powered text-to-speech conversion; avatar-based video content creation; customizable voice and visual elements; and useful for accessibility and e-learning applications. The quality of obtained results can be assessed like this: quickly creates, summarizes text, paraphrases English text quite well, creates text tests, but very simple ones, creates questions to the texts well, highlights key components and gives examples, and explains certain questions on the topic.

The comparison of the key features of the analysed AI-powered tools is presented in Table 1.

The comparative analysis emphasizes the unique features of AI text services in higher education. Thus, ChatGPT and Writesonic both provide significant text production and summary features,

Table 1

Comparative analysis of AI-powered tools

Feature	Voicebooking	ChatGPT	Writesonic	Grammarly	AI Studio
Text Generation	No	Yes	Yes	No	No
Editing Tools	No	Yes	Yes	Yes	No
Text Summarization	No	Yes	Yes	No	No
Plagiarism Detection	No	No	No	Yes	No
Text-to-Speech	Yes	No	No	No	Yes
Free Version	Limited	Yes	Yes	Yes	Limited

making them ideal for research and academic writing. Grammarly, while not a text generator, does improve the clarity and accuracy of written content. Voicebooking and AI Studio improve accessibility by providing text-to-speech functionality. However, plagiarism detection remains a severe shortcoming, with only Grammarly providing this feature. Most services offer free versions, making them accessible to students, however premium features frequently give increased functionality.

Thus, it is clear that AI-powered text services have become indispensable in the education sector. ChatGPT and Writesonic help students and teachers with research, content creation, and test preparation. Grammarly ensures high-quality academic writing, while AI Studio enhances listening skills through text-to-speech features.

Teachers, writers, journalists, and marketers benefit from AI text tools that generate blog posts, and news articles efficiently. Writesonic and ChatGPT stand out for long-form content generation, whereas Grammarly helps refine text quality. AI tools significantly enhance professional communication. Grammarly and ChatGPT assist in writing educational texts, business reports, emails, and official documents, ensuring clarity and professionalism. Voicebooking and AI Studio offer valuable solutions for audio and video content creators. They enable users to produce voiceovers and avatar-based videos, making content more engaging and accessible to wider audiences.

Despite their benefits, AI text tools present ethical concerns, including plagiarism risks, data privacy issues, and overreliance on automation. Users should exercise discretion when using AI-generated content and ensure compliance with ethical guidelines in academic and professional settings.

Conclusions. AI-powered text-generating services are revolutionizing modern higher education by improving academic writing, facilitating

research, and increasing accessibility. Summarizing the analysis of five AI-powered text services (Voicebooking, ChatGPT, Writesonic, Grammarly, AI Studio), we can draw the following conclusions:

– Two services (ChatGPT, Writesonic) perform approximately identical functions, with some ChatGPT copes better than Writesonic (e.g., generating tests), but Writesonic created a table with an explanation.

– With Voicebooking, you can do very little with the free version. It quickly and efficiently voices the text in the selected voice (you can choose a female or male voice). In the paid version, you can voice not only text but also video or make a storyboard with your voice.

– Grammarly is a service that helps you write texts in English and makes them more effective and clearer. It does a good job of editing texts or individual sentences, and suggesting necessary changes. A good tool in the professional activities of a teacher or editor.

– AI Studio voices the text, creating an avatar in video format, which is a useful tool for listening.

All these services are useful in the educational activities of teachers and students. The AI does not complicate, but only simplifies the usual process of creating content. The tools have a simple and easy-to-use interface, and if necessary, a hint is proposed.

However, ethical concerns must be addressed by AI literacy initiatives and institutional policies. Future research should look into the long-term effects of AI in education and its role in shaping academic integrity. Universities should take proactive initiatives to responsibly integrate AI into their programs, ensuring that students gain critical thinking and analytical skills. As AI advances, it is critical to maintain a balanced strategy that combines technology with higher education's essential ideals.

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АНАЛІЗ ВИКОРИСТАННЯ СЕРВІСІВ ШІ ДЛЯ ГЕНЕРУВАННЯ ТЕКСТУ У ВИЩІЙ ОСВІТІ

Надзвичайно стрімкий розвиток штучного інтелекту (ШІ) суттєво трансформував методи та принципи створення завдань і навчального матеріалу в освітній системі загалом і у вищій освіті зокрема. Інструменти на основі штучного інтелекту, такі як ChatGPT, Writesonic, Grammarly, Voicebooking і AI Studio, широко використовуються у формуванні завдань, академічному письмі, дослідженнях, узагальненні вмісту та генеруванні рішень. Ці інструменти використовують обробку природної мови (NLP) і алгоритми машинного навчання, щоб допомогти студентам і викладачам створювати добре структуровані високоякісні тексти, одночасно підвищуючи ефективність і продуктивність навчання.

У статті представлено комплексний аналіз сервісів штучного інтелекту генерації тексту та їхнього застосування в сучасній вищій освіті. П'ять відомих інструментів штучного інтелекту були оцінені на основі їхніх

характеристик, переваг і недоліків їхньої допомоги у створенні навчальних завдань. Проведено порівняльний аналіз їхньої ефективності у створенні зв'язного тексту, удосконаленні стилю письма, виявленні граматичних помилок, узагальненні наукових статей і покращенні доступності завдяки можливостям перетворенням тексту в мовлення.

Огляд наукових джерел відображає нинішню наукову дискусію щодо сервісів генерування тексту на основі ШІ. Важливі теми, які вивчаються в них, включають те, як штучний інтелект може покращити академічне письмо, як він може запропонувати індивідуальний досвід навчання, а також етичні питання, включаючи конфіденційність даних, загрози плагіату та надмірну залежність від контенту, створеного ШІ. Навіть незважаючи на те, що інструменти на основі штучного інтелекту мають багато переваг, залишаються питання про те, як вони можуть вплинути на критичне мислення та академічну доброчесність студентів. Хоча інструменти на основі штучного інтелекту пропонують величезні вигоди та переваги, все ще існує проблема їхнього впливу на академічну доброчесність і навички критичного мислення.

Щоб забезпечити етичне та успішне впровадження, навчальні заклади повинні створити чіткі правила відповідального використання штучного інтелекту та включити знання ШІ в навчальні програми, оскільки генерування тексту за допомогою штучного інтелекту продовжує розвиватися та прогресувати. Досліджуючи довгостроковий вплив штучного інтелекту на освіту та академічну доброчесність, ця стаття доповнює науковий дискурс щодо потенціалу технологій і труднощів впровадження їх у вищу освіту.

Ключові слова: штучний інтелект, генерація тексту за допомогою штучного інтелекту, вища освіта, засоби письма на основі ШІ, обробка природної мови.