Using ChatGPT as a Learning Tool: A Study of Ukrainian Students’ Perceptions

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Abstract
Artificial intelligence and generative AI in higher education emerge as transformative forces, profoundly impacting educational practices and methodologies. This paper explores students’ experiences using ChatGPT for learning purposes and investigates their satisfaction levels with the support provided by this tool. For data collection, the authors developed a questionnaire, and a study was conducted among a random sample of 247 university students from Ukraine graduating in Business, Engineering, and IT. The findings confirm that students most commonly rely on ChatGPT when searching for information and working on language-related tasks, such as text editing and text improvements. The study contributes to a better understanding of AI tool integration in diverse academic disciplines, highlighting the importance of tailored strategies to meet distinct needs and expectations across various specialisms in higher education. Moreover, the findings suggest high satisfaction among students of all three specialisms with using ChatGPT for learning purposes, including working on tasks and assignments, and a positive attitude toward this tool in promoting the quality of learning. The results of this study may encourage administrators and educators at higher education institutions to incorporate good practices on using Generative AI tools into curricula and instructional practices, with relevant guidelines on the use of AI and a substantial focus on developing students’ skills on how to use generative AI tools effectively for different purposes and in various academic and professional domains.

Keywords: AI tools, ChatGPT, generative AI, higher education, language learning, Ukrainian students’ perceptions

Introduction

In higher education, integrating advanced technologies into teaching and learning is becoming a need rather than just a want, transforming traditional teaching and learning methodologies. Among various technological advancements of the first decades of the 21st century, Generative Artificial Intelligence stands out as a promising tool for redefining the dynamics of classroom preparation and student engagement. Specifically, ChatGPT, an example of such AI, has gained instant popularity among students as an interactive conversational model capable of generating human-like responses based on the input it receives.

As the benefits of using generative AI models for educational purposes become increasingly evident, researchers from various disciplines are dedicating more attention to exploring its role in education, seeking to explore various potential applications to enhance teaching and learning. Concerns have also been raised on the ethical nature of using AI tools to support learning and academic research, and this, in turn, leads to the need for careful consideration of its limitations.

This paper seeks to study the multifaceted role of Generative AI, mainly focusing on ChatGPT in the context of higher education, with a specific emphasis on students’ perceptions regarding its utility in their preparation for classes. By examining the evolving landscape of education technology and its intersection with students’ learning experiences, this study aims to explore the potential benefits, challenges, and implications associated with integrating ChatGPT into educational settings.

Overall, educators have a growing understanding that adopting Generative AI in education represents a paradigm shift, offering new opportunities to revisit and improve traditional pedagogical approaches. Tools like ChatGPT, powered by deep learning algorithms and natural language processing, are able to engage students in interactive conversations, provide instant responses, and offer support and assistance tailored to individual needs. As students navigate the deep waters of academia, this technology becomes an additional resource, a time-saver, and often a co-creator in the learning process, going far beyond traditional textbooks and conventional learning materials.

After just over a year since the launch of ChatGPT in November 2022, it is evident that it has become an indispensable tool and companion in students’ pre-class preparation stage. Its capacity to swiftly address students’ inquiries, clarify concepts, and suggest relevant resources has significantly and almost immediately impacted the process and quality of learning. Educators of all levels, at their end, have also quickly responded to the new challenge by looking at the benefits Generative AI presents for the teaching process - including lesson planning, in-class applications, and various forms of AI-facilitated assessment.

However, amidst the prospects of using Generative AI for various educational purposes, concerns and considerations emerge. Ethical implications surrounding the use of AI, the reliability of information generated, trustworthiness of sources, potential biases in responses, and the impact on critical thinking skills have also been widely discussed and questioned in academic and scholarly circles.

Understanding students’ perceptions of the frequency and value of ChatGPT usage in academic settings is essential for its acceptance, effectiveness, and areas for improvement. In light of these aspects, this article explores and analyzes students’ perceptions of using ChatGPT as a learning companion in their preparation for classes. The findings of a survey conducted for the
purposes of this study shed light on students’ routines and perceptions while offering some valuable food for thought to educators and administrators in higher education.

**Literature review**

New technologies, particularly Artificial Intelligence as a phenomenon in education, have attracted academic attention for over a decade (Selwyn, 2016; Zawacki-Richter et al., 2019). Digital technologies are often praised for their role in bringing about noticeable enhancements in the field of education, which leads to “improving learning (e.g. making learning more social, ‘situated’ or ‘authentic’) or improving learners (e.g. getting them engaged, motivated or able to learn).” (Selwyn, 2016 p. 9).

The advent of large language models (LLS) in late 2022 and the almost immediate success of ChatGPT have resulted in a significant number of various studies, both conceptual and empirical, into the possibilities of conversational AI and its impact on traditional teaching and learning paradigms. Within this broad spectrum, the intersection of AI and language learning has been particularly interesting. As part of this paper, we have reviewed several vital studies and findings related to the incorporation of AI in educational settings, focusing on its impact on language learning. By examining existing research, this section seeks to provide a comprehensive understanding of the current state of AI applications in language education.

Following the adoption of the Recommendation on the Ethics of Artificial Intelligence (UNESCO, 2021), the organization released several important publications, including a Start Guide on the use of AI in Higher Education (Sabzalieva & Valentini, 2023) and a joint UNESCO IESALC Primer for Higher Education Stakeholders (Liu et al., 2023) with specific guidance on how to implement the recommendations in the framework of the UN Sustainable Development Goal 4 (Quality Education). The institutional role of AI in higher education and its implications for universities have been explored by scholars worldwide (Schiff, 2022; Chan, 2023; Spivakovsky et al., 2023). Yet, despite numerous resources for educators regarding using AI tools in classrooms, including blogs, webinars, and instructional guides, practices of different universities vary greatly and guidelines for using AI tools as part of the learning process in formal educational settings are somewhat limited. This underscores the importance of exploring these issues more thoroughly to understand their implications for the future better.

When it comes to language education, there is already an established agreement among researchers that the capabilities of LLMs deserve special attention. The study of Pack and Maloney (2023) addresses the issue of accessibility of LLMs in language teaching and learning and highlights that AI tools have been employed in various language education aspects, mentioning specifically automated written corrective feedback, machine translation, conversation practice, and automatic text generation exemplified by chatbots, such as OpenAI’s ChatGPT-3. According to Liao et al. (2023), the potential of generative AI, specifically ChatGPT, consists of enhancing non-native English speakers' language skills. Focusing on listening, speaking, reading, and writing skills and using the “instruction-reply” approach, the authors outline how generative AI technology can be correlated with English language learning and conclude that “generative pre-training artificial intelligence has considerable auxiliary capabilities for the four skills of English ESL learning” (Liao et al., 2023 p. 45).

Another body of current research pertains to pedagogy, or more specifically methods, strategies, and techniques used in language teaching. Several important studies conducted in Asia explore the implications of AI on ELT pedagogy. The main conclusion is that despite technological
advancements, traditional methods like lectures persist. Studies explore personalized learning, with Kim (2022) examining pedagogical strategies’ impact on Korean TOEIC learners. Lee et al. (2023) introduce a learner-generated-context (LGC) approach, utilizing digital technology to create contexts based on learner actions, fostering autonomous learning experiences.

Teachers’ attitudes to Generative AI and specifically to the popularity of ChatGPT have been a matter of research. A recent study commissioned by the British Council focuses on the influence of Generative AI on the English language teaching landscape within education systems, with a particular focus on studying teachers’ perceptions of the impact of AI on language learning (Edmett et al., 2023). A significant portion of the surveyed English language teachers (1,348 respondents) reported using AI-powered tools. While optimistic about AI’s potential as a supplementary tool for tailored resources, autonomous learning, and linguistic skill improvement, respondents voiced concerns regarding over-reliance, reduced human interaction, misuse, and AI’s inability to grasp language subtleties and culture fully. Despite seeing AI as promising, there is a strong agreement that it should complement, not replace, human-led teaching.

A more recent study by Meniado (2023) reports the supportive role of ChatGPT in English language teaching, learning, and assessment. The study also explores the challenges and threats such as inaccurate responses, academic dishonesty, skills deterioration, technical limitations, and educational disparities. Kohke et al. (2023) examine how English language instructors in higher education feel about using generative AI tools for teaching and reveal the significance of building language instructors’ familiarity and confidence with using AI-driven teaching tools, addressing their challenges and concerns, and the need for tailored support and professional development.

In this paper, the focus is on the study of students’ practices and perceptions of the use of ChatGPT in formal educational settings. In previous studies, students reported seeing ChatGPT as a user-friendly tool capable of being used for study instead of a search engine (García-Peñalvo, 2023). Students acknowledged that it is a great time saver when it comes to searching for a wide range of information and appreciated the ability to use it for giving personalized feedback (Ngo, 2023). According to studies conducted by Zhang (2023), Kayali et al. (2023), Qadir (2023), and Baidoo-Anu and Owusu Ansah (2023), ChatGPT is seen as “a virtual intelligent tutoring service” that helps students get answers to their questions and makes suggestions based on their past performance, their needs, interests, and learning progress.

Current studies report the benefits and limitations of AI as perceived by both educators and learners. Generative AI, and in particular the free version of ChatGPT, is often criticized for lack of reliability, incorrect information and bias in content, inability to assess source credibility, absence of ethical considerations, lack of human interaction, and high level of learners’ dependence on the chatbot (Edmett et al., 2023; Ngo, 2023; Kayali et al. 2023).

In our study, we focus on students’ frequency of using Generative AI for different types of assignments, levels of satisfaction with the experience of using ChatGPT, and their perceptions of the impact of Generative AI on the quality of learning. Our findings complement existing studies providing a focused look into specific experiences of using ChatGPT in the learning process and the impact of AI on the quality of learning, which, in our opinion, proves the need to streamline the efforts that are currently being made by higher education institutions in the field of institutionalizing AI, defining its scope of ethical application, and focusing on taking advantage of enhanced learning experiences in can provide to students today.
Methodology

Data for this study was gathered during November 2023 using an online survey through a Google Form questionnaire that was distributed to students of two Ukrainian universities, Taras Shevchenko National University of Kyiv and National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”. The study comprised a sample of 247 Ukrainian university students who were selected through a random sampling technique. The study sample is predominantly composed of students aged 18 to 24 years, comprising 71.7% of the total participants. The next largest age group is 25 to 34 years, representing 13.7%, followed by participants aged 34 to 44 years, accounting for 14.6% of the sample. In terms of education, a majority of participants are Bachelor’s degree students, constituting 65.2% of the sample. The second most prevalent education level is a Master’s degree (MA), with 27.9% of participants studying towards this qualification. A smaller percentage, 6.9%, studies toward a Doctorate (PhD students).

The questionnaire developed for the purposes of this study contained two sections: the participants’ demographic information and the questionnaire elements that address research objectives. To assess students’ levels of satisfaction with the quality of support provided by ChatGPT and students’ perceptions of the impact of ChatGPT on the quality of learning, a 5-point Likert scale was employed, ranging from 1 (very dissatisfied) to 5 (very satisfied).

Findings

In order to reach our research aim that consisted of gathering insight into students’ perceptions of the quality of support provided by ChatGPT to their academic learning needs, we have formulated the following research questions:

1. What are the most frequent types of learning assignments that students use ChatGPTs for?
2. To what extent are students satisfied with the assistance provided by ChatGPT?
3. What is the perceived impact of ChatGPT on learning?

To gather insights, we asked students two sets of questions. The first set aimed to raise awareness of the frequency and types of assignments that students use ChatGPT for, and the second set was intended to find out students’ perceptions of the quality of results produced by ChatGPT and its impact on their learning. Key findings and our interpretations are presented in figure one.

![Figure 1](image_url)

*Figure 1. The frequency of using ChatGPT for learning purposes*
The frequency of using ChatGPT varies among students across different disciplines. Figure one shows that the highest frequency of “always” using ChatGPT is observed among the Information Technology (IT) students with a significant 43%, followed by Business at 22%, and Engineering at 7%. Furthermore, in the “often” category, Business leads with 40%, followed by Engineering at 23%, and IT at 16%. Conversely, participants who reported using ChatGPT “not very often” were most prevalent in Engineering at 33%, followed by Business at 17%, and IT at 16%. For those who used ChatGPT “rarely”, the highest percentage is in Engineering at 16%, followed by IIT at 17%, and Business at 13%. Finally, students who reported “never” using ChatGPT dominated Engineering at 11%, followed by Business and IT, both at 8%. Consistently higher use of ChatGPT in the “always” category within the Business and IT domains suggests a significant reliance on this tool for academic assignments. Conversely, significant variations in usage frequency across disciplines, particularly in the “sometimes”, “rarely”, and “never” categories confirm the complex dynamics of acceptance and incorporation of AI-assisted technologies in academic environments.

**Figure 2.** The purpose of using ChatGPT in learning

Figure two highlights a variety of purposes for students to use ChatGPT. The highest percentage (74.3%) of respondents reported using ChatGPT as a valuable tool for retrieving information. A substantial majority (65.0%) acknowledge the effectiveness of this AI tool in speeding up the time required to complete an assignment, suggesting its significant impact on time management. Equally noteworthy is the percentage of students who use ChatGPT for brainstorming ideas (55.6%). A significant proportion of respondents (39.7%) acknowledge using ChatGPT to improve the quality of the assignment performed as well as for text editing purposes, including correction of stylistic and punctuation errors. Interestingly, only 27.6% of students reported using ChatGPT to complete homework, while 23.8% of students use ChatGPT for translating texts and 23.4% find the tool beneficial for test and exam preparation. A smaller but still considerable percentage (13.1%) use ChatGPT for creating visuals, such as presentations and graphs, while the lowest number of respondents (7.5%) report using the tool for classwork-related activities. Moreover, IT students mentioned in comments to the questions that ChatGPT is a helpful tool for learning programming, writing and testing code for their assignments.

These findings suggest versatility of ChatGPT across diverse academic assignments, with an important emphasis on its role in information retrieval, time optimisation, content creation, and language-related activities.
In response to the question regarding specific types of assignments performed using ChatGPT, students reported engaging in a diverse range of activities. Figure three shows a substantial 60.7% used ChatGPT for writing assignments, underscoring its prevalent role in assisting with various language-related tasks. Literature reviews also emerged as a significant application, with more than half of the students (51.4%) employing ChatGPT for this purpose. Presentations were another common task, with 34.6% of participants incorporating ChatGPT to enhance their presentation materials. Lab reports were prepared with the assistance of ChatGPT by 27.6% of respondents, demonstrating its contribution to scientific documentation. Final papers were another frequently tackled task, with 24.1% of students using ChatGPT for their completion. Additionally, oral reports for seminars and oral answers during classwork saw respective engagements of 18.2% and 16.4%. Engineering and IT students also noted that they used AI to solve problems and synthesizing information from various resources. In contrast, business students use it for writing emails and quick information searches.

The higher percentages associated with writing assignments, literature reviews, and presentations indicate its significant impact on tasks requiring content generation and organization. Overall, ChatGPT as a tool seamlessly integrated into the academic workflow demonstrates its adaptability in supporting students across various tasks, contributing to both written and oral aspects.
The analysis of students’ satisfaction with the quality of assistance provided by ChatGPT in academic tasks is shown in Figure four. The highest percentage of “very satisfied” respondents is observed in the Engineering domain at 15%, followed by IT at 12%, and Business at 6%. In the “satisfied” category, IT leads with 42%, followed by Business at 36%, and Engineering at 33%. Participants who indicated being “neither satisfied nor dissatisfied” is most prevalent in Business at 46%, followed by IT at 36%, and Engineering at 30%. Conversely, in the “dissatisfied” category, Business has 7%, Engineering has 13%, and IT has 9%. The “very dissatisfied” respondents were most prominent in the Engineering domain at 9%, followed by Business at 5%, and IT at just 1%.

These findings emphasize the importance of considering discipline-specific factors in evaluating students’ satisfaction with AI tools in the educational context. While ChatGPT proves beneficial for many, understanding and addressing discipline-specific needs and expectations can further enhance its effectiveness and user acceptance in diverse academic settings.

Figure 5. Students’ levels of satisfaction with the quality of assignments performed using ChatGPT

Figure five yields insights into the perceived effectiveness of the tool and the quality of produced results. Notably, in the “very satisfied” category, Business students expressed the highest satisfaction at 11%, closely followed by IT at 10%, and Engineering at 9%. Within the “satisfied” category, IT leads with 41%, followed by both Business and Engineering at 37%. Those indicating being “neither satisfied nor dissatisfied” were most prevalent in Business at 46%, followed by Engineering at 45%, and IT at 44%. Conversely, 9% of Engineering, 5% of Business and 4% of IT students reported being dissatisfied with the quality of performed assignments. At the same time “very dissatisfied” responses were minimal, with Business and IT both at 1%, and Engineering at 0%.

Students from the Business domain expressed higher levels of “very satisfied” responses, indicating a notable appreciation for the outcomes of ChatGPT-assisted tasks. However, the overall satisfaction levels, particularly in the “satisfied” category, were comparable across Engineering and IT. The prevalence of students in the “neither satisfied nor dissatisfied” category suggests a degree of ambivalence within each discipline, possibly reflecting varying expectations or experiences.

These findings suggest an overall positive perception of the quality of tasks generated by ChatGPT, with some variations across disciplines.
The assessment of students’ evaluations regarding the impact of ChatGPT on the quality of their learning is shown in Figure 6. A significant proportion of participants in both Business and Engineering domains expressed being “very satisfied”, with percentages of 25% and 26%, respectively. In contrast, the IT domain had a lower percentage of “very satisfied” responses at 11%. In the “satisfied” category, Engineering students reported the highest satisfaction level at 43%, followed closely by IT at 41%, and Business at 29%. Students who selected “neither satisfied nor dissatisfied” are most prevalent in the IT domain at 44%, followed by Business at 32%, and Engineering at 18%. Dissatisfaction levels, both “dissatisfied” and “very dissatisfied”, are relatively low across all disciplines, with Business reporting 11% dissatisfied, Engineering at 12%, and IT at 3%. “Very dissatisfied” responses were minimal, with Business at 3%, Engineering at 1%, and IT at 1%. These findings underscore the varied impact of ChatGPT on the perceived quality of learning across disciplines, emphasizing the need for nuanced approaches to align the tool with the diverse expectations and experiences of users in different academic domains.

Discussion

Overall, the findings of this study suggest somewhat varying degrees of ChatGPT integration within different academic assignments, with some contrast in usage patterns among Business, Engineering, and IT disciplines. However, what is uniform among all specialisms are quite high levels of satisfaction with the perceived quality of assistance provided by ChatGPT in response to academic prompts and, therefore, similarly high levels of perceived positive impact of the AI tool on the quality of learning. This highlights the need for further exploration into the factors influencing the adoption of ChatGPT within different specialisms in higher education and encourages researchers, educators, and administrators to look into ways of incorporating the use of generative AI into the learning process so that it contributes to supporting students’ academic experiences and developing their autonomous learning skills.

Noteworthy is the consistent satisfaction among students specializing in Business and Engineering domains, with a substantial percentage expressing being “very satisfied”. Engineering students, in particular, displayed a high level of satisfaction, indicating the positive influence of ChatGPT on their learning experiences. Engineering students exhibited the highest percentage of participants reporting being “very satisfied”, indicating a notable appreciation for the tool’s quality.
of help. Meanwhile, IT students expressed the highest overall satisfaction, with the majority falling into the “satisfied” category. The prevalence of “neither satisfied nor dissatisfied” responses was most pronounced in the Business domain, showcasing a diverse range of sentiments within this group. Dissatisfaction levels, both “dissatisfied” and “very dissatisfied”, were generally low across disciplines, suggesting a predominantly positive reception of ChatGPT.

The study underscores the diverse applications of ChatGPT, ranging from information retrieval to task completion and content creation. The tool’s substantial role in improving task efficiency and aiding information searches highlights its versatility. Moreover, participants reported using ChatGPT routinely for tasks such as brainstorming, text editing, and creating visuals. Unsurprisingly, IT students found ChatGPT valuable for programming-related tasks. These findings emphasize the multifaceted utility of ChatGPT in diverse academic scenarios.

The investigation into satisfaction levels reveals generally positive sentiments, with variations across disciplines. Engineering students stand out with the highest “very satisfied” responses, showcasing their appreciation for ChatGPT’s assistance. While IT students expressed the highest overall satisfaction, Business students revealed diverse views, with a considerable proportion indicating neutrality. This nuanced satisfaction profile underscores the need for tailored approaches to technology adoption in distinct academic domains.

Even though the limitations of this study include a relatively small sample size and focus on only three academic domains, its findings provide important insights into understanding the reality behind the use of generative AI in academic (and professional) settings that should urge academic institutions to rethink and adjust their attitudes towards the place of AI in education, while also rethinking their role in developing students’ skills in using AI tools effectively.

Future research can delve deeper into the factors influencing technology adoption and explore ways to enhance the alignment between AI tools and varied educational contexts. Moreover, it would be interesting to study prompt writing strategies and their impact on the quality of the obtained results. Business students, operating in the verbal domain, are often characterized by more elaborate prompts and a heightened proficiency in paraphrasing. Conversely, engineering and IT students tend to formulate more precise, specific requests. This variance in prompt styles may introduce a layer of complexity when interpreting the results, as the effectiveness of ChatGPT could be influenced by linguistic variations and contextual demands inherent to each academic discipline.

Conclusions and Recommendations

In conclusion, the findings of this study suggest that students view ChatGPT as a useful learning tool which they often rely on working on various academic assignments. In line with the conclusions of some similar studies (Kayali et al., 2023; Ngo, 2023), students mostly report positive experiences with the use of ChatGPT in education, suggesting that ChatGPT can be used as an important tool that enriches the learning experience. Most importantly, as our findings suggest, most students believe that ChatGPT enhances the quality of learning. As a result, its effective application in higher education may further enhance the perceived quality of higher education.

Higher education institutions may take time to respond to challenges and implement changes; this has also been the case with AI already, but the more research is made into its potential, the clearer it gets that its impact on the way students consume information and acquire knowledge is going to transform the traditional learning paradigms for good. It is also apparent
that despite current imperfections (such as performance issues, density of errors, difficulties in responding to some prompts, inadequate citing, etc.), the Generative AI is going to improve fast and tools like ChatGPT and alike will become much more accurate and reliable for working with data.

Since Generative AI tools will become omnipresent, the skills that students need to develop are how to use their capabilities to formulate the proper prompts most effectively, evaluate responses, identify and avoid potential bias. As a result, critical thinking skills complemented with functional skills needed to use the AI tools effectively will make a difference. Higher education institutions should consider introducing courses on using AI to students graduating in all specialisms, while also providing teaching staff with relevant professional development opportunities.

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