



RESEARCH ARTICLE

Students' Perceptions of the Benefits and Challenges of Integrating ChatGPT in Higher Education

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ChatGPT has attracted the greatest attention in higher education, especially concerning how it can support and enhance learning and instructional activities. This paper aims to present a critical review of the advantages and disadvantages that result from integrating ChatGPT into higher education. This study designed an online questionnaire. The online questionnaires were shared with undergraduate students at three Jordanian universities: Applied Science Private University, Jerash, and Petra via WhatsApp, Facebook, Twitter, Email, and LinkedIn. According to this research, the advantages of CHATGPT are saving time, getting immediate answers to various questions, writing for projects and homework, aiding in language learning, unified feedback, further learning material, and greater accessibility of information. Of course, there are disadvantages too: less critical thinking, only partial language capacity, incomplete knowledge of subjects, developing dependency on technology, misinformation, data privacy, and biased responses. The study concludes by recommending CHATGPT as a useful source of information, but its users must be sensitive to limitations and possible inaccuracies about the subject matter; fact-checking procedures must be done to establish whether the material is correct. Further, great care must be taken when using ChatGPT professionally to protect sensitive and secret information.

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INTRODUCTION

The application of AI in education has a very short chronology, while important attention and adoption have been recorded in modern times. The origin of AI use in schooling can be located around the 1960s and 1970s when computer devices first saw applications by scholars to deliver customized teaching to cater to the unique needs of each learner (C. Karthikeyan, 2023; X Zhai, 2022). The first research that served as the basis for advancing increasingly sophisticated teaching tools and platforms that utilize artificial intelligence is *Teaching machine programs that generate problems as a function of student interaction* that paved the way for the Intelligent Tutoring Systems (ITS) to be used in classroom settings (Uhr, 1969). During the 1980s and 1990s, the widespread availability of personal computers and the emergence of the Internet facilitated the advancement of educational software and online learning platforms, leading to their increased complexity and sophistication. The initial endeavors mainly concentrated on delivering content and assessment rather than offering tailored instruction or adjusting to the specific requirements of individual learners (Skjuve, Følstad, & Brandtzaeg, 2023; Xiaoming Zhai, 2022). AI has the potential to revolutionize education through

its ability to present learners with personalized learning opportunities that are tailored to meet their needs. Personalized learning is a learning approach in which technology assists learners by adapting learning content and processes to suit their needs, considering, for example, their previously acquired knowledge and skills, interests, or a particular learning style.

These areas of machine learning and Natural Language Processing (NLP) advancement in the early 2000s allowed the actual development and growth of new instructional technologies with artificial intelligence. Examples of these instructional technologies include ITSs, educational games and simulations, and adaptive learning platforms. These technologies can adjust to each learner's unique needs, deliver personalized education, and assess tasks. AI has been used differently: personalized learning, automating administrative tasks, and even tutoring or mentorship services. In the future, with further development in AI, more innovative applications of AI in education are very likely to be seen.

Gill et al. established that the use of AI has become increasingly in the limelight in various sectors, including higher learning. Artificial intelligence applications have become increasingly crucial in higher education establishments. Such applications include adaptive learning, automated marking, intelligent teaching systems, and support for teaching staff. The result of the support is that there are cost efficiencies and enhancements in learning performance. Educators have at hand some promising artificial intelligence tools that will engage them as personal assistants, grade students, draft lesson plans, and offer personalized learning opportunities. Therefore, AI technologies are increasingly vital in creating interactive virtual learning environments and intelligent content, reducing language barriers, narrowing the gap between learning and teaching, and creating customized programs for one student. Some interesting AI tools for educators are Gradescope, ChatGPT, Querium, IBM Watson Assistant, and Canva. According to Baidoo-Anu & Ansah, 2023 and Guan et al., 2020, the research has chosen the most popular AI platform, CHATGPT, because it gained tremendous popularity after its release, with almost 180 in August 2023.

CHATGPT

Since its release in November 2022, CHATGPT has received extensive public attention. Correspondingly, professionals, students, policymakers, and higher education specialists look into this phenomenon from many areas of interest. It is part of the GPT series, which includes GPT-3 and GPT-4. It is derived from a model belonging to the GPT-3.5 series, which underwent training until the beginning of 2022. It can respond to inquiries, aid in various activities, including creating electronic correspondences, written compositions, and computer programming, and deliver individualized evaluations. Despite being a relatively new advancement, ChatGPT has already found extensive use in various aspects of higher education, such as teaching and learning, research, administrative tasks, and community engagement (Sawahel, 2023).

CHATGPT and education

The use of AI technologies in education and their impact on learning, students' development, evaluation, assessment, and certification, particularly in human-led instruction, is a subject of ongoing debate characterized by optimism and caution. Rudolph, Tan, and Tan (2023) indicated that there are worries regarding academic integrity and the potential misuse of learners. These tools are misused for university exams. The user's text is concise. More than two months following its first release, certain scholars have observed that a proportion of approximately 20% of learners are utilizing AI programs. The rate of student utilization may potentially exceed the reported figures. In January 2023, a study was conducted among over a thousand university students, revealing that over one-third used ChatGPT for writing assessments. Among the surveyed students, a significant majority (75%) acknowledged that their actions may be classified as cheating; however, they proceeded to engage in such behavior. The utilization of ChatGPT by certain students resulted in the implementation of prohibitions by certain colleges. It elicited concerns from several scholars who characterized these tools as a "menace" and a "detriment to education" (Sawahel, 2023).

CHATGPT and learning

With the potential for creating and assessing information, ChatGPT can perform a wide range of tasks related to teaching and learning. Along with other forms of artificial intelligence, ChatGPT could help

improve learning outcomes and optimize students' learning experience more fully. This can be done as an independent tool or fully integrated into existing systems and platforms within higher education institutions. ChatGPT can carry out a wide variety of basic or specialized tasks, from simple research and calculations to proofreading, among others, as argued by Kasneci et al. (2023), Sabzalieva & Valentini (2023), and Silva, & El-Ayoubi (2023).

CHATGPT for academic and personal research

ChatGPT can generate ideas, insights, and connections that may not be obvious even to a human expert in the matter at hand. Thus, at the initial stage, this conventional method of identifying a research gap by studying literature, using search engines, and eliciting expert opinions can also be supplemented with a discussion between the researcher and ChatGPT. It will be able to work through volumes of academic literature, identify relevant articles, and summarize their findings quickly and efficiently. This may help save a great deal of time and energy on the researcher's part. They can also help write research papers in various ways: introduction, literature review, methods, results, and discussion sections. This has the potential to enhance researchers' productivity by allowing them to allocate their time and attention to other facets of their research (DÖNMEZ, Sahin, & GÜLEN, 2023; Sabzalieva & Valentini, 2023; Silva et al., 2023).



Figure 1: illustrates the potential applications of ChatGPT within the context of the research process.

Statement of the problem

Using ChatGPT and other expansive language models (LLMs) in higher education offers a range of benefits and obstacles. One possible benefit of ChatGPT is its ability to aid students in creating ideas for various academic tasks such as examinations, research, analysis, and writing. This benefit has the potential to enhance their overall learning experiences. Most previous research highlighted its pros and cons qualitatively based on the educator's viewpoint. However, very little research has been written on the role of CHATGPT among Arab students, and no research has been conducted in Jordan regarding students' perceptions regarding the efficacy of CHATGPT as a virtual assistant for higher education students. This research investigated the benefits and challenges of incorporating ChatGPT within higher education.

Research questions

This research addressed the following research questions:

RQ1: What are the common uses of CHATGPT among Jordanian university students?

RQ2: What are the benefits of ChatGPT within the context of higher education?

RQ3: What are the challenges associated with incorporating ChatGPT within the context of higher education?

LITERATURE REVIEW

An examination of contemporary peer-reviewed literature on the utilization of ChatGPT within higher education and academia may reveal several developing themes. The utilization of ChatGPT in general education is one of the notable aspects to consider. (Atlas, 2023; King, Cellular, & Bioengineering, 2023; Neumann, Rauschenberger, & Schön, 2023; Rudolph et al., 2023). At the same

time, the predominant focus of the current discourse revolves around utilizing this particular tool within the context of medical education (Koga, 2023; Mohammad et al., 2023b), engineering (White et al., 2023), human-computer interactions (Tabone & De Winter, 2023), and others. Moreover, others have expressed apprehensions and advantages about academic research, writing, publishing, authorship, and other broad domains (Fauzi et al., 2023; Huang, Kwak, & An, 2023). Some publications in the collection include letters, opinions, or editorials, potentially lacking a formalized review procedure. The utilization of ChatGPT in academic and higher education settings is a relatively recent development currently being investigated (Cucchiari et al.; Zaremba & Demir, 2023).

Rawas (2023) reviewed the published paper on ChatGPT to highlight its role in long-term use in higher education. This study comprehensively analyzes existing literature on using artificial intelligence (AI) in education, specifically highlighting the ChatGPT model and its potential implications within higher education. This study also investigates the advantages and disadvantages of using ChatGPT in higher education and provides recommendations for its implementation. Based on the research presented in this study, ChatGPT offers a noteworthy prospect for higher education institutions to enhance the caliber and availability of education. However, ChatGPT must be integrated with great care, and its pros and cons must be considered before its usage.

In their 2023 paper, Fauzi et al. studied CHATGPT and its effects on the productivity of academics and students. They conducted a desk search for published research relevant to CHATGPT. They analyzed 18 research. They added that the use of ChatGPT may contribute significantly to the productivity of students by substantially contributing to the overall quality of student productivity. Using this language model will likely contribute significantly to student empowerment in several capacities. It will also provide them with some information and resources that will be worth availing, improve their language, allow them to work together, manage time more effectively, and be more effective, which then gives support and inspires one another." In contrast, Kraugusteeliana, Indriana, Krisnanik, Muliawati, and Irmanda (2023) investigated the contribution of CHATGPT in raising the workload and output of the instructors and enhancing the quality of education given to the students. They discussed 31 papers published on CHATGPT. Consequently, in this work, they find that information technology and artificial intelligence, which ChatGPT embodies, offer extensive benefits to educators in teaching. They project that ChatGPT will assist educators in preparing and presenting teaching materials, helping students, researching, improving papers, and improving job effectiveness. On the other hand, Stokel-Walker (2023) indicated that CHATGPT helps increase clicks for productivity. However, the wide usage of CHATGPT in generating information might contain some risks to critical thinking. He found that education providers should try modernizing and strengthening their critical thinking or reasoning skills rather than being wholly dependent on CHATGPT.

On the implications of CHATGPT for academic integrity, Cotton, Cotton, and Shipway (2023) debate the promises and problems of integrating ChatGPT within higher education about the benefits and risks of using such a tool might come with. This is also underlined by the report's developments on challenges in identifying and mitigating academic dishonesty. It proposes ways institutions could enhance such resources' responsible and ethical use. The strategies discussed above include policy development and processes, training and support provided to students, and different tools used to detect and prevent academic dishonesty. The conclusion of the findings of the study shows both opportunities and challenges that artificial intelligence integration into higher education presents. However, universities may effectively address these challenges with a proactive and ethical approach to implementing the AI tool. To that effect, Bowman (2022) raised concern about the application of CHATGPT by students in doing their assignments and graduation projects. According to his results, he perceived that the level of plagiarism would be high among students, and the output could be meaningless.

Fuchs, in 2023, showed how CHATGPT could help students be more engaged with course material and feel more connected to higher education. There is, however, several challenges in rapidly introducing these NLP models to the classroom, such as ChatGPT from OpenAI or Bard from Google. The researchers analyzed the challenges and opportunities regarding higher education. Every university should weigh the benefits against the challenges associated with using NLP models in higher education. Such use must be implemented ethically, focusing on enhancing student learning rather

than at the expense of human contact. Generally, huge potential exists for using NLP models to enhance the educational landscape. They permit personalized learning to the students and reduce the administrative burden. Schools have to overcome the above challenges if they are serious about providing quality education to their students.

For the advantages and disadvantages of CHATGPT, C. J. I. J. o. S. Karthikeyan and Research (2023) reviewed the studies about the pros, cons, and limitations of CHATGPT in higher education studies. They indicated that the introduction of ChatGPT has brought a new dimension to the academic community, enhancing their efficiency and providing a standard against which academic achievements may be measured. The utilization of ChatGPT in a cautious manner can also contribute positively to the educational community. However, it is possible for humans, with their superior intelligence, to manipulate and exploit ChatGPT. They can create alternative versions of ChatGPT that surpass or outperform it, thereby rendering ChatGPT obsolete. In this regard, ChatGPT should be seen as a tool that enhances the learning community rather than a competitor to humans' professional expertise. Regardless, human brains have the potential to continually improve and adapt, ensuring their dominance and invincibility in the future.

METHODS AND RESEARCH DESIGN

In the current research, the researchers utilized a non-experimental descriptive method designing a survey instrument to obtain Jordanian university students' perceptions regarding the effectiveness of CHATGPT as a virtual assistant in higher education.

The design of the questionnaire

The researcher designed a questionnaire to elicit Jordanian university students' perceptions regarding the efficacy of CHATGPT as a learning assistant in higher education. The questionnaire consists of demographic information and 20 questions about the experience of CHATGPT, benefits, and pitfalls of CHATGPT among university students in Jordan. The survey was distributed to Jordanian university students via Facebook, Twitter, LinkedIn, and online academic blogs and groups. Four hundred students replied to the questionnaire, which was deemed significant to provide solid information about the role of CHATGPT among university students in Jordan. The collected data was analyzed statistically using SPSS25.

Reliability and validity

The researchers conducted a pilot study to ascertain the questions' clarity and lack of ambiguity. Moreover, three experts evaluated the survey and recommended changing some items. Their feedback was implemented accordingly. On the other hand, the study conducted a Cronbach Alpha to ensure the consistency of the result for the constructs of the study, as shown in Table 1

Table 1. Cronbach's results of the study's constructs

Section	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
Experience with ChatGPT	.874	.876
Pros of CHATGPT as an academic assistant	.846	.848
Cons of CHATGPT as an academic assistant	.846	.847
The reliability of all constructs	.856	.859

The reliability table shows that each section has a Cronbach's alpha coefficient of 0.85 or more, indicating outstanding consistency. This implies that the items within each section are highly valid in assessing the same underlying construct.

RESULTS AND DISCUSSION

The present study was created to elicit information about university students' perceptions regarding the efficacy of CHATGPT as a learning assistant in higher education. The study designed a survey to collect information about the common uses of CHATGPT and its pros and cons in higher education.

Demographic information

		Frequency	Percent
Gender	male	169	42.2
	Female	231	57.8
Education	Postgraduate	325	81.3
	Undergraduate	75	18.7
Age	18-24	75	18.7
	25-30	102	25.5
	31-50	168	42
	50 and above	56	14
Academic Field	Applied Sciences	57	14.3
	Humanities	257	64.3
	Medical and Health Sciences	26	6.5
	Business	60	15
How often do you use CHATGPT?	Daily	99	24.8
	Weekly	193	48.3
	Monthly	108	27

The above table illustrates the demographic information collected about the participants in the study. The first construct asked about the age of the participants. 57.3% of the participants were female, while 42.2% were males. The degree of women's participation compared to men's corresponds with previous research findings suggesting women are more likely to respond to surveys, which aligns with (Smith, 2008; Wu, Zhao, & Fils-Aime, 2022). However, this study adds an interesting point where female users of CHATGPT than male users, which is the opposite of previous research: CHATGPT is used mainly by males, not females (Robert & Cai, 2023; Statista, 2023).

Additionally, most participants are highly educated (postgraduate), with 81.3%. This result has updated the research regarding the difference between the undergraduate and postgraduate use of CHATGPT (L. MCKENZIE, 2023). Moreover, the analysis showed that the respondents to the survey were relatively young, with 42% of those between 25 and 30. The predominant academic discipline among ChatGPT users is Humanities, accounting for 64.3% of the user base. This is followed by Applied Sciences, which comprises 14.3% of users. Business-related fields constitute 15% of the user population, while Medical and Health Sciences represent 6.5% of users. The prevailing frequency of ChatGPT utilization is predominantly every week, accounting for 48.3% of users. Subsequently, a notable portion of users engage with ChatGPT daily, constituting 24.8% of the user base. Monthly use represents the remaining 27% of users. In sum, the demographic information of ChatGPT users indicates a higher level of popularity among those who are young, female, possess a solid educational background and have pursued studies in the field of Humanities. Nevertheless, it is crucial to acknowledge that the data as mentioned earlier merely represents a momentary depiction of the current user population, and the demographic composition of ChatGPT users has the potential to evolve.

The common use of CHATGPT

Research question 1: What are the common uses of CHATGPT among Jordanian university students?

This section highlights the common uses of CHATGPT among Jordanian university students. The chart below illustrates the typical applications of ChatGPT, an expansive language model chatbot created by OpenAI. The chart has been derived from a survey conducted among users of ChatGPT, with the percentages indicating the relative frequency of ChatGPT usage stated by the participants for each specific purpose.

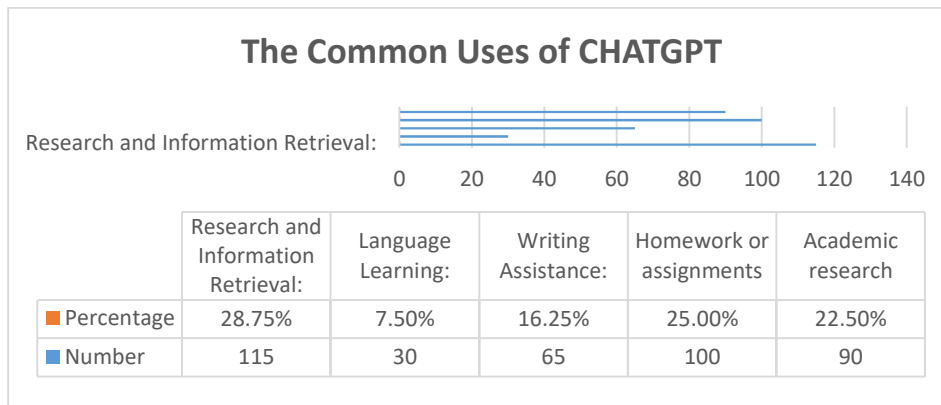


Figure 2: Common uses of CHATGT

Figure 2 shows that most respondents used CHATGPT for Research and information retrieval, accounting for 28.75% of its usage. This is closely followed by its utilization for homework or assignments, which constitutes 25% of its usage. Additionally, ChatGPT is used for academic research with 22.50%. It is employed as a writing assistant in 16.25% of cases, while language learning accounts for 7.5% of its usage.

The pros of CHATGPT in higher education

Research question 2: What are the benefits of ChatGPT within the context of higher education?

ChatGPT is a tool that uses machine learning algorithms for natural language processing to formulate responses based on the input it receives. This tool's conversational and question-answering features will help students who seek improvement in their proficiency of a particular language or even search for information related to any subject area that they are interested in (Advertising, 2023).

	Agree	Neutral	Disagree
CHATGPT enhances my reading skills and academic performance.	186 46.5%	73 18.2%	141 35.3%
CHATGPT provides me with accurate information.	175 43.8%	152 38%	73 18.3%
CHATGPT allows me to ask questions to understand better and do my assignment properly	295 74%	73 18	32 8
ChatGPT provides us with some entirely accurate replies to our inquiries.	236 59%	124 31%	40 10%
ChatGPT may be a helpful resource to practice language skills and boost Language exam preparation.	219 54.8%	132 33%	49 12.3%
ChatGPT provides consistent and standardized feedback, ensuring that all students receive the same level of assistance and guidance.	151 37	185 46.3%	46 16%
CHATGPT recommends additional learning materials, textbooks, or online resources to supplement course materials, enabling students to explore topics further.	210 52.5%	58 14.5%	132 33%
CHATGPT consolidates information from various sources, making it easier for students to access relevant course materials, lecture notes, and study resources in one place.	257 64.3%	86 21.5%	49 12.3%
CHATGPT helps with homework, assignments, or problem-solving outside regular class hours.	277 69.3%	91 22.8%	32 8%

The first statement reads that ChatGPT will improve learners' reading skills and enhance their academic performance. The research revealed that a majority of the respondents agreed with the statement that ChatGPT would enhance students' reading skills and performances academically; 46.5% of the participants supported this, while an equally remarkable proportion of 35.3% opposed it, and a small minority of 18.2% remained neutral. This result corroborates the work done by Ali et al. 2023, which articulates that CHATGPT increases interest in reading books and various pieces of information. On the other hand, the survey results showed that CHATGPT offers correct instructional resources and information. Such information is highly debated among scholars. These findings agree with Ali et al., 2023, that CHATGPT gives correct answers. The result also contrasts what Paul said in 2023, who mentioned that CHATGPT supplies incorrect information. To put a close to this debate,

the study concludes with the following: the accuracy of ChatGPT at providing information or answers is less than perfect and may be contingent on a set of factors including but not limited to the quality and quantity of its training data, contextual clues, user input, linguistic complexity, and possible biases.

The second construct determined the role of CHATGPT with information on various educational resources and access to reliable and credible information. The majority of participants agreed to the usefulness of the tool, ChatGPT, regarding this particular goal at 43.8%. Some individuals disagreed at 18%, and a considerable percentage remained neutral at 38%. In that respect, apparent neutrality may indicate partial hesitation on the part of some respondents to give a final answer to the question or, actually, an avoidance of giving an incorrect or misleading response. The research shows that students and educators widely utilize ChatGPT; nonetheless, there is a degree of ambiguity regarding its optimal utilization. This result aligns with (Dilmegani, 2023) that CHATGPT facilitated students' learning process. It enabled them to answer questions and comprehend concepts. Nevertheless, several educators have raised apprehensions over the precision of ChatGPT and the possibility of learners exploiting it for cheating in their assignments and academic projects, as reported by (Tlili et al., 2023).

The third construct investigated the utilization of ChatGPT in facilitating students' ability to inquire, enhance their comprehension, and accomplish academic tasks. A significant majority of participants (73%) agreed with the beneficial impact of ChatGPT on their academic endeavors. A minority of individuals (18%) expressed a neutral stance, whereas a smaller proportion (8%) held a dissenting viewpoint. ChatGPT is significantly useful to students, facilitating enhanced learning outcomes and improved assignment completion rates. These findings agree with Community, 2023, which reports that CHATGPT enhances students' understanding. Summary ChatGPT is helpful in general information searches. However, how it is accurate depends on various factors. Thus, users are advised to approach it with critical judgment, against which also to verify the accuracy of information provided through ChatGPT using sources deemed reliable, especially when correctness is crucial.

In the fourth stage, the research participants were asked about the responses from ChatGPT and whether they answered or not truly according to accuracy and reliability. Yes, a high degree of accuracy and reliability in responses created by ChatGPT were agreed upon by 59% of the participants. However, 31% showed neutrality, while 8% said the opposite. ChatGPT is generally reliable, but one should also be wary and verify its outputs from other sources. The study shares the view of Barrot (2023) and Xiao and Zhi (2023) that ChatGPT is effective in assisting language learners in mastering any given language and getting themselves ready for a language test. ChatGPT can be an efficient tool in promoting the learners' acquisition of a certain language and preparing them for the language examination. The system's effectiveness depends on many factors relating to the quality of the data used for training, the complexity of the language being focused on, and the accuracy of the response given by the system. Therefore, learners using ChatGPT should be discretion and associate with other language learning tools to maximize its benefits. The user's text is too limited to satisfy an academic version of a rewritten text.

The fifth statement of the research has looked at the responses on the importance of ChatGPT in developing linguistic competence and preparing for a language exam. Most participants supported the role of ChatGPT as an assistant for that particular purpose, 54.8%. A fair number, 33%, were indifferent, but another share showed their disagreement, 12.3%. ChatGPT is often regarded as a beneficial resource for anyone seeking to improve their language proficiency and prepare for examinations. However, bear in mind that ChatGPT remains in the development stage. Therefore, one has to use it with other resources and strategies. This supports the view of Dwivedi et al. (2023) and Roumeliotis & Tselikas (2023), stating that the CHATGPT does not provide any valid indication that ChatGPT usually provides feedback to the end-user consistently and systematically.

In the sixth question of this study, participants were asked about the potential of ChatGPT to give feedback that is fair, consistent, and proportional at the same time for all the students. The response percentage for this question was 46.3% neutral, 37% agree, and 16% disagree. The surveyed people responded to this single issue with some ambiguity, probably because they were not confident about the veracity of their knowledge or experience with ChatGPT. To what extent is ChatGPT capable of

giving consistent and fair feedback on the work of all students? Let us investigate this further. This finding agrees with that of First (2023) and Lo (2023) in that CHATGPT supported the end users with resources for learning to enhance their understanding and complete academic exercises. Based on this finding, it can be revealed that ChatGPT has great potential as a learning resource since it provides users with the best foundation for preparing course syllabi, teaching materials, and assignments. However, the reality remains that sometimes ChatGPT will still generate inaccurate information, untimely responses, and biased outputs.

In the seventh section of the study, participants were queried regarding ChatGPT's capacity to provide recommendations for supplementary educational materials, including textbooks, online resources, and other learning materials, to augment existing course content. Most participants (52.5%) agreed with ChatGPT's capability to perform this task. Nevertheless, a notable proportion of respondents (33%) expressed disagreement, while a minimal percentage (14.5%) maintained a neutral stance. This implies that ChatGPT is a helpful resource for students seeking to expand their knowledge on a subject that extends beyond the curriculum taught in their educational setting. Nevertheless, it is imperative to acknowledge that ChatGPT is now in the developmental stage, and it is of utmost importance to corroborate its suggestions by consulting additional sources. The result of the study aligns with (Kim et al., 2022; Sajja, Sermet, Cikmaz, Cwiertny, & Demir, 2023) that CHATGPT helps amalgamate knowledge from diverse sources.

In the eighth part of the questionnaire, participants were asked if ChatGPT could suggest additional learning materials recommended for students, such as textbooks, internet-based resources, or other materials that could complement course materials. More participants agreed with ChatGPT's ability to do so at 52.5%. However, an appreciable number of participants showed their disagreement at 33%, while the lowest percentage of participants remained neutral. ChatGPT can help students find more information on topics beyond their school curriculum. However, one should remember that ChatGPT is still a prototype, and for more accuracy, its suggestions should be cross-checked with other sources. The result of this study is consistent with the findings of, amongst others, Kim, Lee, & Cho 2022; Sajja, Sermet, Cikmaz, Cwiertny, & Demir, 2023, to the fact that CHATGPT supports the amalgamation of knowledge from diverse sources.

In the ninth part of the study, the participants were asked about the effectiveness of ChatGPT in helping students with their homework and other assignments or solving problems, even outside regular class hours. A majority (69.3%) opined that ChatGPT is capable of this. However, a remarkable 22% had a neutral opinion, while the minority thought differently and was at 8%. That means Chat GPT is helpful for students to rely on when they are to work on their homework outside the classroom. At this time, however, it should be noted that Chat GPT is still in its development stage. Therefore, these tools and strategies have to be combined to use them. Idea generation for assignments, requesting comments on drafts, or finding additional materials related to specific subject matter is one of the potential uses of ChatGPT in an educational setting. The user must be careful and scrutinize the answers provided by ChatGPT much more thoroughly to verify their accuracy and relevance. This outcome corresponds to Dwivedi et al., 2023; and Ray, 2023, which report that CHATGPT is helpful in assignments and academic tasks. However, conducting assignments with the help of CHATGPT is some form of academic malpractice and a violation of academic ethics. This view has been shared by Javaid, Haleem, Singh, Khan, and Khan 2023; and Shaw, Morfeld, and Erren, 2023. Besides, total dependence on CHATGPT during solving assignments may impede or damage their capabilities in developing their thinking and problem-solving skills.

Cons of CHATGPT

Research question 3: What are the challenges associated with incorporating ChatGPT within the context of higher education?

The first construct was the impact the use of ChatGPT would have on participants' critical thinking. The majority of participants agreed that relying on ChatGPT would negatively affect developing critical thinking skills at 73%, while one-fifth showed a neutral opinion at 21%, and just a few at 6% had the opposite opinion.

	Agree	Neutral	Disagree
Reduced Critical Thinking: Relying solely on AI for answers may reduce students' critical thinking skills or ability to solve problems independently.	292 73%	84 21%	24 6%
Language Limitations: CHATGPT and AI models may have limitations in understanding or communicating in languages other than English or with fewer training data, such as Arabic.	223 55.8%	144 36%	33 8.2%
Limited Subject Expertise: AI teaching assistants have general knowledge but may lack expertise in specialized or advanced topics in certain fields.	301 76%	16 4%	84 20%
Overreliance on Technology: Depending too heavily on AI teaching assistants might discourage students from seeking help from human instructors or peers. It could lead to a reduction in social interaction and collaborative learning experiences.	216 54%	143 35.8%	41 10.2%
Potential for Misinformation: CHATGPT learns from vast datasets, which may contain incorrect or biased information. There is a risk that students could receive inaccurate information or be exposed to biased viewpoints.	258 64.5%	109 27.3%	33 8.3%
Technical Issues: AI-based teaching assistants may encounter technical glitches or downtime, disrupting students' access to support and resources.	265 66.2%	84 21%	51 12.8%

That is the importance of being aware of any potential risks that may be involved with ChatGPT and to use the tool in a manner so as not to diminish one's critical thinking skills. This finding has been agreed upon by the fact that the usage of CHATGPT by students discouraged thinking and doing creative analysis on topics. The ease of access and relative efficacy of text-generation AI software can discourage students from formulating their ideas and independently pursuing research activities. Consequently, there may be a lessened creativity or innovation in their academic work.

The second point of the research asked the participants to identify the limitations of AI concerning its interaction with the end users in languages other than English, such as Arabic. More than half of the participants believed that ChatGPT could not afford them well with non-English language-based inquiries. Many respondents were indifferent at 36%, while only 8.2% disagreed. That indicates that ChatGPT is currently in the development phase and does not boast perfection in languages other than English. However, it should be outlined that ChatGPT can be characterized by a continuing learning process in which it is improving its proficiency and ability to communicate in several languages shortly. Overall, the findings indicated that ChatGPT is a very useful means of communication; however, its natural limits are to be conceded and accounted for. When ChatGPT is used for communicating in languages other than English, one should be patient and verify the response with other sources of information. This finding supports the assertion by Bogost, 2023 and Marr, 2023 that CHATGPT cannot comprehend the complexity of human languages and discourses. It also lacks the cognitive ability and emotional intelligence of a human being. On the issue of overreliance on AI, it was found that complete reliance on AI teaching assistants may eventually discourage students from reaching out for help from their human professors or classmates due to problems. This may have the potential effect of less interpersonal interaction and opportunities for collaborative learning processes. This finding is consistent with the work of Essel, Vlachopoulos, Tachie-Menson, Johnson, & Baah, 2022; Uunona & Goosen, 2023.

The third construct addressed in the research is that participants asked about the possibility of ChatGPT answering different questions relevant to higher education. Results showed that 76% agreed that the former's low ability levels were not enough to meet such expectations since it appeared to give general knowledge instead of specialized expertise. On the other hand, 21% disagreed with the statement since only a small fraction opted to answer neutrally at 4% stake. ChatGPT is still in development, and its capabilities related to providing specialist academic support in certain subjects are far from perfect. Nevertheless, it should be noted that ChatGPT demonstrates

a continuous learning curve, which improves its ability to provide a proficient support trend that is expected to progress more in times to come. The general trend of the findings of this study suggests that ChatGPT has immense use in learning and development. One should be fully aware and respectful of the limitations it sets. Utilizing ChatGPT for academic research and writing, it is best to ensure the results are further supported by readings from more established sources such as journals, books, or web content from reputable providers. In support, this finding is in line with the fact that the application of ChatGPT may unconsciously propagate biases and inaccuracies from data the model was previously trained on, as shown by N. J. McKenzie in 2023. Further, this will be subject to the kind of data that trains the model, with a greater likelihood that the responses of the model fit the political ends of some nations or groups.

The fourth question in the survey asked about the effects of complete reliance on ChatGPT regarding students' interaction with teachers and peers. 54% of the participants agreed that relying too much on ChatGPT reduces student-teacher interaction. In comparison, 35.8% of the student population could not answer this question, and relatively few of those questioned, or 10.2%, disagreed. This may imply that ChatGPT will likely reduce student interaction with instructors and peers. This may be detrimental, as a lack of interaction with instructors and peers plays a major role in learners' academic and social lives. However, at this point, it must be considered that ChatGPT remains in the development stage. As such, its interaction with student impact will likely be adjusted in future versions. This finding agrees that using ChatGPT would only further exacerbate bias and inaccuracy, as it has already been exposed to these from the training data it got. Responses from the model could more likely agree with the political goals of certain nations or groups, depending on what it was trained on.

The fifth question in this survey assessed the credibility and correctness of the information provided by ChatGPT. Most of the respondents supported the statement that ChatGPT may give a response that is incorrect or biased; the share was 64.5%. While in the neutral point of view, the prevailing was 27.3%, just 8.3% were opposing. This means they should be aware that ChatGPT could give biased or incorrect information at any time. Moreover, its development process requires awareness from the public that it has limited ability to determine, for the time being, what is appropriate and what is not. The second point is that ChatGPT may also be biased in the sources of information. This supports the study of technological problems in CHATGPT. These challenges have been identified as causing user disruptions, resulting in misunderstandings and generating irrelevant responses.

The sixth question in the survey related to the technical challenges associated with ChatGPT and any potential consequences for students. Most respondents, 66.2%, agreed that ChatGPT has technical faults, which have been observed to cause disruptions and negatively affect students. An appreciable population, 21%, had a neutral view, while a small percentage, 12.8%, held a contrary view. This, therefore, means that the technical challenges ChatGPT faces are a significant problem for students. Technical errors can impede the learning process on the part of the students and can pose difficulties in leveraging ChatGPT effectively. These results also point to a contradiction from the findings of Elyoseph, Hadar-Shoval, Asraf, & Lvovsky, 2023, that CHATGPT has higher emotional intelligence than human beings. Human beings possess emotional intelligence, contextual knowledge, and ethical guidance that make them crucial in building credibility and encouraging an active learning environment as opposed to artificial intelligence software.

The survey's seventh inquiry sought to gather participants' perspectives on the emotional intelligence of ChatGPT concerning that of human instructors. The overwhelming majority of participants (97.5%) agreed that both ChatGPT and AI teaching assistants are deficient in their capacity to offer emotional support. This capability is commonly associated with human teachers. A minority of participants (2.5%) had a neutral stance, whereas a tiny proportion (6%) held a dissenting viewpoint. This observation implies that the current capabilities of ChatGPT and AI teaching assistants fall short of offering comparable emotional support to human educators. Human instructors can comprehend and address students' emotional states, a capability that is now beyond the reach of ChatGPT and AI teaching assistants. Providing emotional support plays a crucial role in facilitating the learning process. Providing a safe and comfortable environment can contribute to the well-being of learners and facilitate their ability to surmount obstacles. Providing emotional support to learners has been found to enhance their likelihood of success in education significantly.

Acknowledging that ChatGPT and AI teaching assistants are now in the developmental phase is imperative. There is a potential for an enhanced provision of emotional assistance to learners. Nevertheless, students must understand the constraints of ChatGPT and AI teaching assistants in this domain. This result agrees with (Talagala, 2023) that ChatGPT may not provide comparable personalization to human instructors. Although ChatGPT exhibits the ability to generate discussion that resembles human-like interaction and deliver prompt and comprehensive responses to inquiries, its capacity to accommodate students' learning styles and offer personalized feedback is comparatively less successful when compared to that of a human teacher.

The eighth statement was a question about whether ChatGPT can make its output responsive to the specific needs of individual users. Of the students surveyed, 56.3% believe that ChatGPT cannot do this. A substantial minority, 37.8%, provided neutrally oriented responses, and only a small proportion, 6%, disagreed. By implication, from this finding, it follows that ChatGPT cannot achieve the same level of individualization as would be possible with a human teacher. Human tutors can tailor their teaching methodologies to meet the specific individual needs of a student. At present, this is something that ChatGPT can only do inadequately. The use of personalization introduces a critical component to foster good pedagogy. The potential to enhance student learning through such an approach promotes greater effectiveness and efficiency. Students in learning process have been noted to increase their potential for success when offered customized education. It is essential to note that ChatGPT remains developmental as far as offering personalized instruction to learners is concerned. Much potential exists in terms of offering customized instruction to learners. However, students need to comprehend the limitation that characterizes ChatGPT in this area. It is, therefore, in line with the view of Agrawal, Gans, and Goldfarb (2023) that AI can violate user privacy since AI assistants may acquire and take advantage of information obtained illicitly, which includes identity theft. Moreover, with AI assistants having human voice-like qualities, there is a probable violation of privacy because people are deceived into thinking that there is a conversation between two persons while, in the real sense, it would be between a person and a machine, as suggested by Agrawal et al. (2023). It is, however, quite significant that effective security measures and strict privacy controls for AI assistants are first considered to handle these issues. Additional identification verification, legal criteria against impersonation, and making AI assistants inspectable, explainable, and overridable are just some of the functionalities that can enable this goal. Additionally, domain-specific AI virtual assistants can ensure automation of specific procedures and the capability to implement measures to prevent further occurrences, increasing the productivity, efficacy, and proficiency of security teams operating within particular domains. Despite worries about keeping data private and safe, which concerns using AI teaching assistants, ways exist to mitigate that and keep the users' data safe.

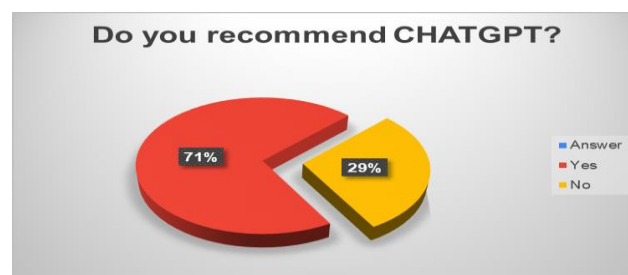
The ninth statement concerned the assessment of the participants of Chat GPT regarding picking up on contextual hints and implied meanings in texts and questions. The majority, 62.8%, agreed that it did struggle with this exercise. An appreciable number, 31.3%, showed indifference, while 6% held opposing views. This, therefore, indicates that at this point, ChatGPT cannot pick up the nuances that are usually present in human language, especially in Times New Roman. This may lead to misunderstandings or misinterpretation of ChatGPT's answers. For instance, ChatGPT could fail to recognize when sarcasm forms part of a question, or it cannot understand in what context the question is related to a prior conversation. First, one must remember that ChatGPT is in the development stage. Further development will likely be by focusing on contextual subtlety and implicit messages within texts and questions. However, at this stage in its development, this particular aspect of ChatGPT needs to be duly acknowledged for its limitations. This finding is supported by the view of those who maintain that ChatGPT cannot offer similar levels of personalization as that offered by a human tutor. Although ChatGPT can produce discussions that sound human and quick and detailed answers to questions, it is far less successful at adapting to students' learning styles and giving personalized feedback than a human teacher.

Tenth statement: The statement obtained information on the users' perceptions of privacy and data issues. The analysis indicated that most respondents expressed concern over the privacy of their shared knowledge and the possibility of sharing users' information with outside parties at 77.25%. On the contrary, 18% expressed their neutral views regarding the statement, while only 4%

disagreed that the private information of users was at risk. The study is in line with the fact that AI may violate the users' privacy, where the assistants may tend to obtain and exploit information by incidents including identity theft illicitly. Moreover, as AI assistants are further developed to sound like human voices, it also creates a potential breach in privacy because such technology can deceive a person into thinking there is a conversation between two people, but actually between a person and a machine, as suggested by Agrawal et al. (2023). Regarding this, enough security coupled with strict privacy measures for AI assistants should be vigorously pursued for effective moderation of these issues. Additional identifications, legal criteria against impersonation, and making AI assistants inspectable, explainable, and overridable are ways of delivering this goal. Applying domain-specific AI virtual assistants can enable automation for specific procedures and prevention measures, enhancing security teams' productivity, efficiency, and skill. Even though there are several fears over ensuring data privacy and security in the use of AI teaching assistants, there are ways to mitigate these challenges and ensure users' data security.

Use of CHATGPT

The above sections highlighted CHATGPT's strengths and limitations among the users of four Jordanian universities. 71% of the students recommend using CHATGPT, while only 29% do not. The study recommends using it cautiously, and users should not rely entirely on IT since it sometimes provides inaccurate information.



CONCLUSION

This study examined the CHTAGPT's perceptions regarding using CHATGPT in Higher Education. This study has brought to light the perceptions of Jordanian students about the effectiveness of CHATGPT in Higher Education. As this study indicates, the potential benefits of CHATGPT in higher education include improvement in reading skills, assistance in finding useful information, learning a new language, providing feedback, suggestions about learning materials, and helping students solve problems or complete tasks outside regular classes. On the other hand, CHATGPT has a list of cons; some of these are related to critical thinking. It is very limited in communicating in languages other than English. Over-reliance on technology, misinformation, technical issues, glitches or downtime, inability to provide emotional support, inability to personalize, limited understanding of context, and privacy and data concerns. The application of ChatGPT in Higher Education is promising, and its use seems very advantageous. It could potentially support learners with all manner of tasks. ChatGPT can also become a tool for personalizing learning experiences and providing students with extra support that is needed outside of traditional instructional time. Equally important, though, is consideration of some of the limitations that may impact the use of ChatGPT. The current state of ChatGPT is in a perpetual state of development, meaning it does not always give full and factual information. Furthermore, ChatGPT might be biased towards certain sources of information. Again, it needs to be emphasized that ChatGPT cannot replace human-to-human interaction. Students will always need to interact with their instructors and peers for input, to ask questions, and to work on group projects. ChatGPT shows much promise as a newer tool for higher education. This technology can potentially make learners' learning much more effective and efficient. However, the application of ChatGPT needs to be done responsibly, considering this technology's limitations.

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