INTERNATIONAL JOURNAL OF HUMAN COMPUTING STUDIES

https://journals.researchparks.org/index.php/IJHCS e-ISSN: 2615-8159 | p-ISSN: 2615-1898

Volume: 6 Issue: 3| December 2024

University Students' Perception and Use of ChatGPT: Generative Artificial Intelligence (AI) in Higher Education

Brandon Nacua Obenza, *Ph.D.*[1]****, Alexa Salvahan***[2]***, Alexandra Nicole Rios***[3]***,***

Althea Solo[4]***, Rea Ashlee Alburo***[5]***, Rey Jose Gabila***[6]

College Professor[1], Student Researchers[2-6]

[1-6]University of Mindanao, Davao City, Philippines

----------***----------

Abstract: This quantitative study examined how university students perceive and use generative AI technology, specifically ChatGPT, in higher education. The main objective is to explore and describe university students' perception and use of generative AI, particularly ChatGPT, in the context of higher education. A 5-point Likert scale questionnaire was adopted and used in the study. Five hundred students from various universities in Region XI were surveyed using a stratified random sampling technique. Further, the validity and reliability of the scale used in the study were assessed using Cronbach's Alpha and Factor Analysis and demonstrated acceptable construct validity and reliability indices. The findings revealed that university students demonstrated high levels of understanding, knowledge, perception of the advantages and disadvantages, positive attitude, and strong intention to use generative AI technologies in the context of higher education. Moreover, the respondents showed a moderate level of concern about generative AI.

Keywords: ChatGPT, University Students, Generative AI, Artificial Intelligence, Higher Education, Philippines

INTRODUCTION

The field of education is in a constant state of evolution, driven by the emergence of new technologies that have the potential to revolutionize the way we teach and learn (Haleem et al., 2022). One such transformative force is the adoption of AI-driven chatbots like ChatGPT, which has gained significant popularity among university students in their academic pursuits. In order to improve learning outcomes and student engagement, educational institutions are increasingly investigating the possibility of integrating chatbots supported by artificial intelligence. This innovation is being led by ChatGPT, an advanced chatbot that can generate intricate text and engage in meaningful conversations with users. ChatGPT is at the forefront of this innovation.

In conversational artificial intelligence, the launch of ChatGPT by OpenAI in November 2022 is regarded as a watershed moment in the annals of artificial intelligence history. As a result of its remarkable capabilities, educators have expressed a range of emotions, indicating that it has had a transformative effect on educational practices (Baidoo-Anu & Owusu Ansah, 2023). Within the realm of academia, it functions as a versatile tool that assists students in a wide variety of tasks, including the writing of essays, the generation of ideas for research, the execution of comprehensive literature reviews, the improvement of written documents, and even the coding of computer programs (Owens, 2023). A significant improvement in the student's linguistic abilities has been demonstrated through the use of ChatGPT. A fun and engaging way for students to ask questions, receive immediate feedback, and improve their vocabulary and grammar skills, ChatGPT is a platform that allows students to do all of these things.

Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

INTERNATIONAL JOURNAL OF HUMAN COMPUTING STUDIES

https://journals.researchparks.org/index.php/IJHCS e-ISSN: 2615-8159 | p-ISSN: 2615-1898

Volume: 6 Issue: 3| December 2024

Similarly, Bonsu and Baffour-Koduah (2023) researched students' perceptions and intentions regarding ChatGPT in Ghanaian higher education. They reported positive attitudes toward ChatGPT and a solid inclination to incorporate it into the learning process, making a compelling case for its adoption in education. However, the advent of ChatGPT also introduces novel challenges and potential threats to the education sector. Given its ability to provide specific answers to user queries, there are concerns about its potential misuse in completing written assignments and examinations on behalf of students, raising questions about AI-assisted academic dishonesty. These concerns surrounding the advancement and impact of AI on teaching and learning, especially concerning chatbots like ChatGPT, have garnered attention from higher education stakeholders and scholars of teaching and learning. Key areas of concern include issues related to assessment and examination integrity and ethical considerations (e.g., Eke, 2023; Rudolph et al., 2023; Vincent-Lancrin & Van der Vlies, 2020; Yeadon et al., 2023). ChatGPT holds immense significance due to its potential to revolutionize human-technology communication. Automating responses and enhancing the user experience provides a cost-effective and efficient means to elevate assistance.

College students' perspectives on the availability of artificial intelligence chatbots have been the subject of many studies. There is a gap in our understanding of how students perceive, use, and engage with artificial intelligence platforms such as ChatGPT within the context of the university because existing research frequently focuses on broader technological aspects in education and specific applications. In order to fill this void, the purpose of this research is to investigate the perspectives and experiences of college students regarding the ChatGPT application.

This paper holds substantial importance within education and educational technology due to its focused examination of students' perceptions and utilization patterns of ChatGPT. This study aims to provide significant perspectives on the efficacy of Artificial Intelligence tools as adjunctive educational materials. The results can augment our comprehension of the function and consequences of AI tools in influencing educational encounters. Moreover, it has the potential to augment the current corpus of knowledge and offer developers invaluable direction regarding implementing AI chatbots tailored to the particular requirements and inclinations of college students.

The primary objective of this study is to comprehensively understand and analyze the perceptions and utilization of ChatGPT among university students. The researchers delved into the students' learning experiences with chatbots, aiming to identify challenges and concerns associated with their use.

Literature Review

ChatGPT and similar generative AI technologies can devise unique scenarios that promote collaborative problem-solving and goal attainment among students, thereby nurturing a sense of community among learners. It is debatable that ChatGPT holds substantial potential to support and advance the efforts of educators, students, and researchers (Baidoo-Anu & Ansah, 2023). The efficacy and promise of ChatGPT have undergone thorough examination in various studies and publications. As illustrated by the survey conducted by Omar Ibrahim Obaid et al. (2023), ChatGPT plays a significant role in advancing scientific research by facilitating the generation of innovative concepts, providing fresh perspectives, and enhancing productivity. It proves to be a valuable tool in research and development, fostering innovative solutions and ideas.

In a study by Kuzdeuov et al. (2023), it was demonstrated that ChatGPT can assist visually impaired individuals through text-to-speech applications, making digital content more accessible. Moreover, its role in addressing critical issues such as bias and disinformation positions ChatGPT as a crucial tool for researchers exploring AI ethics. The efficiency of ChatGPT in search engine functionality, as evidenced by Aljanabi et al.

Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

https://journals.researchparks.org/index.php/IJHCS e-ISSN: 2615-8159 | p-ISSN: 2615-1898
Volume: 6 Issue: 3| December 2024

(2023), enables users to input questions and receive relevant and accurate responses, thereby enhancing information retrieval. Realizing the full potential of ChatGPT while navigating the ethical considerations in the ever-evolving landscape of AI technologies necessitates further research. Such efforts are crucial for paving the way toward more responsible and seamless future interactions between humans and machines.

The applications of ChatGPT span diverse domains. In education, it can be utilized to create chatbots and online tutors, aiding students in refining their language skills (Božić & Poola, 2023). Beyond education, ChatGPT's versatility extends to agriculture, where it supports farmers in precision farming, crop disease, and pest diagnosis, crop forecasting, and crop and soil analysis (Biswas, 2023). The advent of ChatGPT represents a transformative force with far-reaching implications, from the classroom to the farm and beyond.

OpenAI's language model, ChatGPT, has garnered significant attention from researchers due to its potential in education. It is an AI-powered tool that generates human-like text based on user prompts. Numerous studies have explored ChatGPT's potential in various educational disciplines, including medical education, higher education in Ghana, construction hazard recognition and safety education, critical thinking skills, and epistemology, yielding promising results. For instance, Huh (2023) found that ChatGPT performed comparably to medical students in a parasitology examination, showcasing its potential in medical education. Raman et al. (2023) identified determinants influencing students' intentions to use ChatGPT in higher education, providing insights for educators to enhance its adoption. Uddin et al. (2023) demonstrated ChatGPT's effectiveness in supporting safety-related curriculum goals in construction hazard recognition and safety education. Mejia and Sargent (2023) highlighted its utility in fostering students' critical thinking skills by providing supplementary experiences that enhance analytical abilities.

The future impact of ChatGPT on traditional evaluations in higher education was critically analyzed by Halaweh (2023) and Zhai (2022), emphasizing the importance of appropriate use and providing recommendations to ensure its moral and practical application. ChatGPT employs machine learning to offer proactive recommendations, automated problem resolution, and customized guidance based on data from multiple sources (Adiguzel et al., 2023).

Theoretical Framework

The guiding force in studies of this nature is the Technology Acceptance Model (TAM), a framework initially crafted to predict the adoption of IT systems, ChatGPT included. It casts a spotlight on potential concerns linked with their implementation. TAM operates on a foundational principle: an individual's attitude toward technology is shaped by their perceptions of its Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) (Davis et al., 1989). Introduced by Davis, TAM is deeply rooted in rational behavior theory, asserting that the actual use of a system hinges on an individual's behavioral intention. This intention, in turn, is influenced by behavioral attitude and perceived usefulness. Notably, perceived usefulness and ease of use substantially shape one's behavioral attitude (1986). By deploying the TAM model, researchers can anticipate users' readiness to adopt technology based on their perceptions.

The PU component assesses the extent to which an individual believes that employing technology would enhance their work and yield superior results (Agbaglo & Author, 2022; Davis, 1989; Scherer et al., 2019). Conversely, the PEOU component evaluates the perceived ease individuals believe they can use technology (Davis et al., 1989). According to TAM, PU and PEOU collectively influence an individual's intention to use a specific technology, underlining that the desire to use technology precedes its actual utilization (Agbaglo & Bonsu, 2022).

The Technology acceptability Model (TAM) is used in this study to examine the optimal acceptability and utilization of ChatGPT in higher education. As a result, TAM can be used to examine university students'

Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

INTERNATIONAL JOURNAL OF HUMAN COMPUTING STUDIES

https://journals.researchparks.org/index.php/IJHCS e-ISSN: 2615-8159 | p-ISSN: 2615-1898

Volume: 6 Issue: 3| December 2024

attitudes and usage patterns of ChatGPT. This option is particularly appropriate because the central tenets of TAM correspond to the characteristics evaluated in this study. By combining Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) into the overall category of 'perceptions,' we can determine their cumulative impact on the 'intention to use' of ChatGPT. We want to understand how students evaluate the utility and usability of ChatGPT and how these impressions impact their intent to use this technology. Thus, ChatGPT's smooth functionality and comfort are critical to its adoption and acceptability.

METHOD

This study employed a descriptive quantitative research design to explore the perceptions and use of ChatGPT among university students. Five hundred university students from Region 11, Philippines, who have been using or had an experience using ChatGPT for academic purposes were included in the study. The respondents were selected through a stratified random sampling technique to guarantee a cross-section of students from various regional universities. Through a thorough knowledge of the perceptions and usage patterns of ChatGPT among the chosen demographic of university students in Region 11, this technique seeks to improve the generalizability and reliability of the study's findings.

In this investigation, data were gathered using a questionnaire for a survey that was adapted from Chan and Hu's work (2023). We used closed-ended questions to collect data, and we used a Likert scale with five points, ranging from 1 (strongly disagree) to 5 (strongly agree), to determine the extent to which respondents agreed or disagreed with particular statements. Specifically, the scale was organized as follows: A score of 5 (Strongly Agree) indicates comprehensive agreement with the statement that has been presented, a score of 4 (Agree) indicates a high level of agreement, a score of 3 (Moderately Agree) indicates moderate agreement, a score of 2 (Disagree) indicates disagreement and a score of 1 (Strongly Disagree) indicates strong disagreement with the statement that has been presented. The purpose of providing participants with this comprehensive explanation of the Likert scale was to assist them in effectively expressing their points of view.

The determination of the general trends, as well as the distribution of scores within the dataset, was accomplished through the computation of descriptive statistics. The data were collected through the use of an online survey, which consisted of distributing a Google Form questionnaire to students who had prior experience utilizing ChatGPT in their academic endeavors. In addition to ensuring that all responses are consistent with one another, this structured approach to data collection also makes it easier to conduct a quantitative analysis of the information that has been gathered, contributing to the comprehensiveness and dependability of the findings of the study.

The validity and reliability of the constructs' or adopted questionnaires were tested and secured using the Jamovi Software 2.0. Cronbach's alpha was used to assess the questionnaire's reliability and internal consistency. Cronbach's alpha values for each factor or indicator ranged from 0.709 to 0.937, indicating an acceptable level of internal consistency. Taber (2018) states that Cronbach's alpha values ≥ 0.70 indicate satisfactory reliability levels. Further, factor analysis was employed to test the construct validity. Kang (2013) asserts that factor analysis is the most frequently employed technique for establishing construct validity as measured by an instrument and is regarded as one of the most robust approaches to establishing construct validity.

Before performing factor analysis, Bartlett's Test of Sphericity was employed to assess the appropriateness of the data for factor analysis (Bartlett, 1973). In 1937, Bartlett proposed a testing procedure to test the hypothesis of equal variances of *k* normal populations Witkovský (2019). The results revealed a p-value < .001, confirming that it is significant; therefore, our measurement model is acceptable for factor analysis. The

Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

INTERNATIONAL JOURNAL OF HUMAN COMPUTING STUDIES

https://journals.researchparks.org/index.php/IJHCS e-ISSN: 2615-8159 | p-ISSN: 2615-1898

Volume: 6 Issue: 3| December 2024

Kaiser-Meyer-Olkin (KMO) statistic was also used to determine the adequacy of sample size for factor analysis. When KMO values fall between 0.8 and 1.0, the sample is judged adequate for factor analysis. Values between 0.7 and 0.79 are moderate, while values between 0.6 and 0.69 are mediocre. If KMO values are less than 0.6, it indicates insufficient sampling and necessitates corrective action (Shrestha, 2021). In this study, the value of KMO statistics is 0.971, indicating that the sample is adequate for factor analysis (Kaiser, 1974). The items exhibited factor loadings that varied between 0.414 and 0.946. Field (2013) suggests that factor loadings below 0.3 should be suppressed. Scores exceeding 0.40 are regarded as stable (Guadagnoli & Velicer, 1988). Further, descriptive statistics were employed in the same software to describe university students' perceptions and use of generative AI technologies.

Assumptions Checks

Bartlett's Test of Sphericity		
χ^2	**df**	**p-value**
21173	703	< .001
KMO Measure of Sampling Adequacy (MSA)		0.971

RESULT AND DISCUSSION

Table 1 reveals that participants demonstrate a high perception or understanding of ChatGPT, with the mean score ranging from 3.51 to 4.03. Specifically, this suggests a prevailing high perception, underscored by the minimal variation among participants' perceptions (Grand Mean = 3.73, SD 1.032).

Moreover, in alignment with the findings of Ngo (2023), students express positivity towards implementing AI chatbots in their academic activities. The researcher observes a heightened awareness among participants regarding the advantages of ChatGPT. According to the feedback received from students, ChatGPT emerges as an exceptional platform, offering numerous advantages in their educational journey.

Table 1. Participants' perception or understanding of ChatGPT

Statements	Mean	SD	Description
I find using ChatGPT to be simple and convenient.	4.03	1.05	High
I believe ChatGPT can help me learn more effectively	3.77	1.18	High
Learning with ChatGPT is enjoyable.	3.74	1.20	
I feel that I can easily understand the content provided by ChatGPT.	3.89	1.09	High
I am willing to invest time and effort to better utilize ChatGPT for learning.	3.57	1.25	High
I expect to use ChatGPT frequently for learning in the future.	3.51	1.29	High
Grand Mean	3.73	1.032	High

In Table 2, the data reveals a positive inclination among participants towards actively incorporating ChatGPT into practical learning scenarios. This is evidenced by their expressed desire to elevate interest, motivation, improvement, and understanding in learning English, with mean scores ranging from 3.44 to 3.58.

Participants not only express a willingness but also a proactive intent to leverage ChatGPT to augment their interest and proficiency in various aspects of English communication skills, including refining writing and

Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

https://journals.researchparks.org/index.php/IJHCS e-ISSN: 2615-8159 | p-ISSN: 2615-1898
Volume: 6 Issue: 3| December 2024

reading abilities, as well as gaining a more profound understanding of language and culture (Grand Mean= 3.50, SD= 1.222).

This affirmative stance aligns seamlessly with the findings of Ajlouni et al. (2023), whose descriptive study at the University of Jordan indicates a pronounced positive attitude towards integrating ChatGPT as a valuable learning tool. Furthermore, findings from the study conducted by Sarang S. et al. (2023) underscore the utility of ChatGPT in enhancing formal English skills. The positive responses, encompassing its perceived usefulness, ease of use, learning capabilities, and overall satisfaction, collectively present a promising indication of ChatGPT's practicality for language learners.

Table 2. Participants' attitude towards actual practice in using ChatGPT.

Statements	Mean	SD	Description
I use ChatGPT to increase my interest and motivation in learning	3.45	1.28	High
I use ChatGPT to improve my English communication skill (listening/speaking).	3.44	1.32	High
I use ChatGPT to improve my English reading and writing abilities (e.g. proofreading).	3.55	1.34	High
I use ChatGPT to help me gain a deeper understand of the English language and culture.	3.58	1.29	High
Grand Mean	3.50	1.222	High

As illustrated in Table 3, participants uniformly maintain a heightened perception of ChatGPT's advantages in their learning experiences, with mean scores ranging from 3.65 to 3.68. Overall, strong perception is evident in generative AI, with a (Grand Mean= 3.67 SD= 1.138), suggesting a broad awareness of ChatGPT's benefits to their learning processes.

Notably, research conducted by Moqbel & Al-Kadi (2023) and Sun & Hoelscher (2023) aligns with these perceptions, indicating that ChatGPT can significantly assist students in enhancing their language skills. The tool proves instrumental in refining grammar, expanding vocabulary, improving sentence structure, and fostering overall language fluency, effectively serving as a virtual language tutor. This convergence of participant perceptions and scholarly findings underscores the potential of ChatGPT as a valuable aid in language learning and skill development.

Table 3. Participants' perceptions regarding the advantages of ChatGPT

Statements	Mean	SD	Description
I think ChatGPT can help me improve the quality of my learning.	3.67	1.19	High
I believe ChatGPT can provide me with more learning opportunities.	3.65	1.21	High
I think ChatGPT can help me enhance my learning abilities.	3.68	1.17	High
Grand Mean	3.67	1.138	High

As observed in Table 4, participants hold distinct views regarding the drawbacks of generative AI. Notably, they express substantial apprehension about issues such as plagiarism (Mean= 3.97, SD= 1.10) and the potential dissemination of inaccurate information (Mean=3.94, SD= 1.10), reflecting a heightened awareness of the limitations inherent in generative AI technologies like ChatGPT. However, participants moderately

Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

https://journals.researchparks.org/index.php/IJHCS e-ISSN: 2615-8159 | p-ISSN: 2615-1898
Volume: 6 Issue: 3| December 2024

perceive generative AI technologies as having limited utility in their English learning (Mean= 2.79, SD= 1.20).

The overall mean perception score (General Mean = 3.57, SD=0.868) suggests a significant level of concern and caution among participants regarding the disadvantages associated with ChatGPT.

Despite some variation in participant responses, a recurrent trend emerges, highlighting the need to address these concerns to bolster users' confidence in the platform's reliability and trustworthiness. Numerous studies have illuminated the potential advantages and drawbacks of employing ChatGPT across diverse fields. In education, apprehensions encompass potential cheating and plagiarism (Iqbal, 2022) and the risk of undermining critical thinking skills (Mohammad, 2023). Similarly, in healthcare, while ChatGPT is commended for enhancing personalized learning and clinical reasoning, concerns persist about data privacy, biased and inaccurate content, and the potential erosion of critical thinking and communication skills (Sallam, 2023). These cumulative findings underscore the need for further investigation and the formulation of guidelines to ensure the responsible and ethical use of ChatGPT.

Table 4. Participants perception regarding the disadvantages of ChatGPT

Statements	Mean	SD	Description
I think ChatGPT may have issues with plagiarism or information leakage.	3.97	1.10	High
I think ChatGPT's responses may contain some inaccurate information.	3.94	1.10	High
I think ChatGPT is not helpful for my English learning.	2.79	1.20	Moderate
Grand Mean	3.57	0.868	High

Drawing on the outcomes outlined in the table below, the mean scores for various inquiries range between 3.51 and 3.96. Participants notably perceive the simplicity and convenience of using Gen AI technologies (Mean=3.96, SD=1.07). Additionally, there is an expressed anticipation of future utilization for learning (Mean=3.54, SD=1.22), employing it to refine English reading and writing skills (Mean=3.52, SD=1.28), and utilizing it for a deeper grasp of the English language and culture (Mean=3.51, SD=1.25). These results collectively indicate a distinctly positive attitude toward ChatGPT.

Participants exhibit an overall favorable viewpoint on GenAI technologies, as evidenced by a (Grand Mean= 3.63, SD= 1.086). This favorable perspective is characterized by viewing Gen AI as a user-friendly interface, expecting future usage for learning, and leveraging ChatGPT to enhance language and cultural understanding.

A pertinent study by RudolphA (2023) explores students' perceptions of chatbots in language-learning scenarios. The findings uncover that students consider the chatbot an invaluable tool for language learning, fostering a positive stance towards its application. ChatGPT is recognized for its potential to aid students in refining their language skills.

Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

INTERNATIONAL JOURNAL OF HUMAN COMPUTING STUDIES

https://journals.researchparks.org/index.php/IJHCS e-ISSN: 2615-8159 | p-ISSN: 2615-1898

Volume: 6 Issue: 3| December 2024

Table 5. Participants current location relating to their attitudes towards ChatGPT.

Statements	Mean	SD	Description
I find using ChatGPT to be simple and convenient.	3.96	1.07	High
I expect to use ChatGPT frequently for learning in the future.	3.54	1.22	High
I use ChatGPT to improve my English reading and writing abilities (e.g., proofreading).	3.52	1.28	High
I use ChatGPT to help me gain deeper understanding of the English language and culture.	3.51	1.25	High
Grand Mean	3.63	1.086	High

Table 6 furnishes a comprehensive overview of the critical variables' mean and other pertinent statistical measures, drawing from the analysis of 500 completed responses. The data within the table offers valuable insights into how participants perceive the integration of generative AI technologies, specifically ChatGPT, into teaching and learning practices, with mean scores ranging from 3.71 to 4.12.

The results underscore participants' awareness of the limitations, inaccuracies, inappropriateness, and biases associated with generative AI technologies. This awareness is reflected in a (Grand Mean = 3.86, SD = 0.915), indicating a high level of knowledge regarding GenAI technologies and suggesting a reasonably consistent understanding among the participants.

Echoing the findings of Rasul et al. (2023), it becomes crucial to acknowledge potential drawbacks, such as the risks of academic misconduct, bias, dissemination of false information, and inadequate assessment design. These drawbacks can potentially hinder the development of essential graduate skills and promote superficial learning.

Table 6. Knowledge of generative AI technologies

Statements	Mean	SD	Description
I understand generative AI technologies like ChatGPT have limitations in their ability to handle complex tasks.	4.12	0.999	High
I understand generative AI technologies like ChatGPT can generate output that is factually inaccurate.	3.89	1.020	High
I understand generative AI technologies like ChatGPT can generate output that is out of context or inappropriate.	3.82	1.063	High
I understand generative AI technologies like ChatGPT can exhibit biases and unfairness in their output.	3.71	1.124	High
I understand generative AI technologies like ChatGPT may rely too heavily on statistics, which can limit their usefulness in certain contexts.	3.80	1.150	High
I understand generative AI technologies like ChatGPT have limited emotional intelligence and empathy, which can lead to output that is insensitive or inappropriate.	3.83	1.099	High
Grand Mean	3.86	0.915	High

The data presented in the table highlights the fact that students have a solid propensity for incorporating generative artificial intelligence technologies, particularly ChatGPT, into their learning and educational practices. Particularly noteworthy is that participants demonstrate a solid willingness to incorporate AI into the classroom, as demonstrated by a (Mean= 3.52, SD= 1.20). As a result of their recognition of the significance of acquiring AI skills for future careers, which is reflected in a (Mean = 3.50, SD = 1.20), this tendency is strengthened. In addition, there is a significant expectation that artificial intelligence will lead to

Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

https://journals.researchparks.org/index.php/IJHCS e-ISSN: 2615-8159 | p-ISSN: 2615-1898
Volume: 6 Issue: 3| December 2024

improved digital competencies, particularly ChatGPT, which received a mean score of 3.63 and a standard deviation of 1.12.

Furthermore, integrating AI technologies in education is seen as offering substantial advantages, particularly in terms of time management. The mean score for timesaving is 3.94, with a standard deviation of 1.08, indicating that AI-powered solutions have the potential to optimize and streamline educational processes. AI tools, such as ChatGPT, are believed to provide unique insights, as suggested by a Mean=3.85, SD=1.09). Respondents also value personalized feedback, as evidenced by a (Mean=3.77, SD= 1.12) along with the 24/7 availability of AI tools, with a (Mean=3.92, SD=1.06). The data additionally indicates that students recognize the potential of AI's anonymous student support services, with a (Mean=3.77, SD=1.12). Overall, students are highly willing to embrace generative AI technologies, reflected in a (Grand Mean= 3.74, SD=0.992).

Several authors provided insights into the implications and considerations of integrating AI into educational settings. For example, Flanagin et al. (2023) discuss the policy established by nature to guide the use of large-scale language models in scientific publications, emphasizing the importance of clear documentation of AI tool usage in academic works. Chai et al. (2020) contribute a theoretical framework for understanding students' attitudes and behaviors toward AI in education by extending the theory of planned behavior to model students' intention to learn AI. Additionally, Eysenbach (2023) illustrates the capabilities of ChatGPT in medical education, highlighting its potential to generate virtual patient simulations, quizzes, and academic curricula.

Table 7. Willingness to use generative AI technologies.

Statements	Mean	SD	Description
I envision integrating generative AI technologies like ChatGPT into my teaching and learning practices in the future.	3.52	1.20	High
Students must learn how to use generative AI technologies well for their careers.	3.50	1.25	High
I believe generative AI technologies such as ChatGPT can improve my digital competence.	3.63	1.12	High
I believe generative AI technologies such as ChatGPT can help me save time.	3.94	1.08	High
I believe AI technologies such as ChatGPT can provide with unique insights and perspectives that I may not have thought of myself.	3.85	1.09	High
I think AI technologies such as ChatGPT can provide me with personalized and immediate feedback and suggestions for my assignments.	3.77	1.12	High
I think AI technologies such as ChatGPT is a great tool as it is available 24/7.	3.92	1.06	High
I think AI technologies such as ChatGPT is a great tool for student support services due to anonymity.	3.77	1.10	High
Grand Mean	3.74	0.992	High

The table below discloses a moderate concern among 500 participants regarding generative AI technologies. Upon closer examination of the data, it becomes apparent that participants harbor a moderate degree of worry (Mean = 3.31; SD 1.17) about the potential undermining of the inherent value of university education when relying on generative AI for assignments. Moreover, there is a notable apprehension (Mean= 3.21, SD= 1.20) among participants concerning potential limitations on social interactions during coursework, which could impact the overall educational experience.

Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

Additionally, there is a sense of unease (Mean = 3.35 and SD = 1.21) regarding the perceived hindrance to enhancing crucial skills like teamwork and problem-solving due to the utilization of AIs. Participants also expressed concerns about the possibility of over-reliance on Generative AI technologies (Mean = 3.19, SD = 1.32), indicating a fear of potential erosion of self-reliance and critical thinking skills.

In summary, the table underscores an overall moderate level of concern (Grand Mean = 3.27, SD = 1.038), suggesting that students have a concern about the impact of generative AI on various aspects, including assignments, social interactions during coursework, the development of generic or transferable skills such as teamwork, problem-solving, and leadership skills, as well as the potential over-reliance on Generative AI technologies.

In his 2023 analysis, Kumar highlights that AI-generated responses to academic writing prompts are generally original and relevant but often contain inappropriate references and lack the personal perspectives typically associated with human-produced content. Meanwhile, Mhlanga (2023) stresses the ethical and responsible use of ChatGPT, advocating for educating students about AI model limitations and biases and encouraging critical thinking when assessing information provided by ChatGPT.

Table 8. Concerns about generative AI technologies

Statement	Mean	SD	Description
Using generative AI technologies such as ChatGPT to complete assignments undermines the value of university education.	3.31	1.17	Moderate
Generative AI technologies such as ChatGPT will limit my opportunities to interact with others and socialize while completing coursework.	3.21	1.20	Moderate
Generative AI technologies such as ChatGPT will hinder my development of generic or transferable skills such as teamwork, problem-solving, and leadership skills.	3.35	1.21	Moderate
I can become over-reliant on generative AI technologies.	3.19	1.32	Moderate
Grand Mean	3.27	1.038	Moderate

CONCLUSION

This study aims to understand and scrutinize the perception and use of ChatGPT among university students in Region XI. Motivated by the relative scarcity of studies in this specific context and recognizing the critical need to capture the student perspective, the research strategically leveraged the theoretical framework of TAM. The findings of this study reveal a significant positive reception and utilization of Generative AI technologies in terms of participants' perceptions and understanding of ChatGPT, attitudes toward practical usage, perceptions of benefits and drawbacks, current locations influencing their perspectives, knowledge of generative AI technologies, and willingness to engage with such technologies. Furthermore, the study sheds light on a nuanced viewpoint, demonstrating a modest amount of anxiety among participants, notably regarding concerns about the constraints on social connections during coursework. This concern extends to potential impediments to developing critical abilities such as teamwork and problem-solving. Furthermore, significant concern is expressed about the potential degradation of self-reliance and critical thinking skills due to over-reliance on AI.

Considering these findings, an idea for future research projects develops. Extending the scope by adding a more significant number of samples may result in a more complete understanding. Following studies with a larger sample size could study factors influencing ChatGPT adoption in various circumstances and cultural

Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

https://journals.researchparks.org/index.php/IJHCS e-ISSN: 2615-8159 | p-ISSN: 2615-1898
Volume: 6 Issue: 3| December 2024

contexts. Furthermore, there is a desire for future studies to include critical aspects of user behavior, such as AI trust, perceived risk, and perceived control. Universities are encouraged to collaborate with AI startups to develop detection methods for recognizing AI-generated content. This strategy approach is compatible with Hu's (2023) and Hosseini et al.'s (2023) efforts to limit the widespread use of ChatGPT among higher education students.

Disclosure Statement

Following the recommendations of Kaebnick et al. (2023) in the responsible use of AI technologies in scholarly journal publishing, the authors declare the role AI-technologies during the preparation of this work. The authors used ChatGPT, QuillBot, and Grammarly in order to improve the interpretation of statistical findings, paraphrase citations, and proofread the study. After using this tool/service, the authors reviewed and edited the content as needed and took full responsibility for the content of the publication.

REFERENCES

1. Adiguzel, T., Kaya, M. H., & Cansu, F. K. (2023). Revolutionizing education with AI: Exploring the transformative potential of ChatGPT. Contemporary Educational Technology, 15(3), ep429. https://doi.org/10.30935/cedtech/13152
2. Agbaglo, E., & Bonsu, E. M. (2022). The role of digital technologies In higher education during the coronavirus pandemic: Insights from a Ghanaian university. Social Education Research, 45-57. https://doi.org/10.37256/ser.3320221402
3. Ajlouni, A.O., Wahba, F.A.A., & Almahaireh, A.S.F (2023, September 20). Students' Attitude Towards Using ChatGPT as a Learning Tool: The Case of the University of Jordan. International journal of interactive mobile technologies. https://doi.org/10.3991/ijim.v17i18.41753
4. Aljanabi, M., Yaseen, M., Ali, A., & Abed, S. (2023). ChatGpt: Open Possibilities. Iraqi Journal for Computer Science and Mathematics, 1(2023), 62–64. https://doi.org/10.52866/20ijcsm.2023.01.01.0018
5. Baidoo-Anu, D., & Ansah, L. O. (2023, March 21). Education in the Era of Generative Artificial Intelligence (AI): Understanding the Potential Benefits of.. ResearchGate. https://www.researchgate.net/publication/369385210_Education_in_the_Era_of_Generative_Artificial_Intelligence_AI_Understanding_the_Potential_Benefits_of_ChatGPT_in_Promoting_Teaching_and_Learning
6. Bartlett, M.S. (1937). Properties of Sufficiency and Statistical Test. Proceedings of the Royal Society A, pp. 160, 268–282. https://doi.org/10.1098/rspa.1937.0109
7. Biswas, S. (2023). Importance of chat GPT in agriculture: According to chat GPT.
8. Bonsu, E. and Baffour-Koduah, D. (2023). From the consumers' side: Determining students' perception and intention to use a chatbot in Ghanaian higher education.. https://doi.org/10.21203/rs.3.rs-2686760/v1
9. Božić, Velibor & Poola, Indrasen. (2023). Chat GPT and education. 10.13140/RG.2.2.18837.40168.
10. Chan, C.K.Y., Hu, W. Students' voices on generative AI: perceptions, benefits, and challenges in higher education. Int J Educ Technol High Educ 20, 43 (2023). https://doi.org/10.1186/s41239-023-00411-8
11. ChatGPT in higher education: Considerations for academic integrity and student learning. (2023, March 21). Journal of Applied Learning and Teaching. https://doi.org/10.37074/jalt.2023.6.1.17

Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

https://journals.researchparks.org/index.php/IJHCS e-ISSN: 2615-8159 | p-ISSN: 2615-1898
Volume: 6 Issue: 3| December 2024

12. Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of computer technology: A comparison of two theoretical models. Management Science, 35, 982– 1003. https://doi.org/10.1080/02602938.2017.1356906
13. Eke, D.O. (2023). ChatGPT and the rise of generative AI: Threat to academic integrity? Journal of Responsible Technology 13. 100060 https://doi.org/10.1016/j.jrt.2023.100060
14. Field, A. (2013) Discovering Statistics using SPSS, 4th edn. London: SAGE.
15. Gill, S. S., Xu, M., Patros, P., Wu, H., Kaur, R., Kaur, K., Fuller, S., Singh, M., Arora, P., Parlikad, A. K., Stankovski, V., Abraham, A., Ghosh, S. K., Lutfiyya, H., Kanhere, S. S., Bahsoon, R., Rana, O., Dustdar, S., Sakellariou, R., . . . Buyya, R. (2024, January 1). Transformative Effects of ChatGPT on Modern Education: Emerging Era of AI Chatbots. Internet of Things and Cyber-Physical Systems. Retrieved November 5, 2023, from https://doi.org/10.1016/j.iotcps.2023.06.002
16. Guadagnoli, E. and Velicer, W. F. (1988). Relation of sample size to the stability of component patterns. Psychological Bulletin, 103(2), pp. 265-275.
17. Halaweh, M. (2023). ChatGPT in education: Strategies for responsible implementation. Contemporary Educational Technology, 15(2), ep421. https://doi.org/10.30935/cedtech/13036
18. Haleem, Abid & Javaid, Mohd & Qadri, Mohd & Suman, R. (2022). Understanding the Role of Digital Technologies in Education: A review. Sustainable Operations and Computers. 3. 10.1016/j.susoc.2022.05.004
19. Han, Z., Battaglia, F., Udaiyar, A., Fooks, A., & Terlecky, S. (2023). An explorative assessment of chatbot as an aid in medical education: use it with caution.. https://doi.org/10.1101/2023.02.13.23285879
20. Hosseini, M., Rasmussen, L. M., & Resnik, D. B. (2023). Using AI to Write Scholarly Publications. Accountability in Research, 1-9.
21. Hu, G. (2023). Challenges for Enforcing Editorial Policies on AI-Generated Papers. Accountability in research (just-accepted). https://doi.org/10.1080/08989621.2023.2184262
22. Huh, S. (2023). Are chatbot's knowledge and interpretation ability comparable to those of medical students in Korea for taking a parasitology examination?: a descriptive study. Journal of Educational Evaluation for Health Professions, pp. 20, 1. https://doi.org/10.3352/jeehp.2023.20.01
23. Kaiser, H. F. (1974). An index of factorial simplicity. *psychometrika*, *39*(1), 31-36.
24. Kang, H. (2013). A guide on using factor analysis in the assessment of construct validity. *Journal of Korean Academy of Nursing*, *43*(5), 587. https://doi.org/10.4040/jkan.2013.43.5.587
25. Kaebnick, G. E., Magnus, D., Kao, A., Hosseini, M., Resnik, D. B., Dubljević, V., Rentmeester, C. A., Gordijn, B., & Cherry, M. J. (2023). Editors' statement on the responsible use of generative artificial intelligence technologies in scholarly journal publishing. *Developing World Bioethics*. https://doi.org/10.1111/dewb.12424
26. Kohnke, L., Moorhouse, B., & Zou, D. (2023). Chatgpt for language teaching and learning. Relc Journal, 54(2), 537-550. https://doi.org/10.1177/00336882231162868
27. Kuzdeuov, A., Nurgaliyev, S., & Varol, H. A. (2023, February 13). ChatGPT for the Visually Impaired and Blind. https://doi.org/10.36227/techrxiv.22047080.v1

Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

https://journals.researchparks.org/index.php/IJHCS e-ISSN: 2615-8159 | p-ISSN: 2615-1898
Volume: 6 Issue: 3| December 2024

28. Mejia, M. and Sargent, J. (2023). Leveraging technology to develop students' critical thinking skills. Journal of Educational Technology Systems, 51(4), 393-418. https://doi.org/10.1177/00472395231166613

29. Mhlanga, D. (2023). Open AI in education, the responsible and ethical use of ChatGPT towards lifelong learning. SSRN: 4354422. http://dx.doi.org/10.2139/ssrn.4354422

30. Moqbel, M. S. S., & Al-Kadi, A. M. T. (2023). Foreign language learning assessment in the age of ChatGPT: A theoretical account. Journal of English Studies in Arabia Felix, 2(1), 71- 84. https://doi.org/10.56540/jesaf.v2i1.62.

31. Ngo, A. (2023, September 14). The Perception by University Students of the Use of ChatGPT in Education. International Journal of Emerging Technologies in Learning. (ijet). https://doi.org/10.3991/ijet.v18i17.39019

32. Omar Ibrahim Obaid, Ahmed Hussein Ali, & Yaseen, M. G. (2023). Impact of Chat GPT on Scientific Research: Opportunities, Risks, Limitations, and Ethical Issues. Iraqi Journal for Computer Science and Mathematics, 13–17. https://doi.org/10.52866/ijcsm.2023.04.04.002

33. Owens, B. (2023, February 20). How Nature readers are using ChatGPT. Nature; Nature Portfolio. https://doi.org/10.1038/d41586-023-00500-8

34. Raman, R., Mandal, S., Das, P., Kaur, T., JP, S., & Nedungadi, P. (2023). University students as early adopters of chatbot: innovation diffusion study. https://doi.org/10.21203/rs.3.rs-2734142/v1

35. Rasul, T., Nair, S., Kalendra, D., Robin, M., de Oliveira Santini, F., Ladeira, W. J., Sun, M., Day, I., Rather, R. A., & Heathcote, L. (2023). The role of ChatGPT in higher education: Benefits, challenges, and future research directions. Journal of Applied Learning & Teaching, 6(1), 1-16. Advanced publication. https://doi.org/10.37074/jalt.2023.6.1.29.

36. Rudolph, J. (2023). Editorial 5(SI1): Technology and education: Innovation or hindrance? Journal of Applied Learning & Teaching, 6(1). https://doi.org/10.37074/jalt.2022.5.s1.1

37. Scherer, R., Siddiq, F., & Tondeur, J. (2019). The technology Aacceptancemodel (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. Computers & Education, 128, 13-35

38. Shaikh, S., Yayilgan, S.Y., Klímová, B., & Pikhart, M. (2023). Assessing the usability of ChatGPT for formal English language learning. European Journal of Investigation in Health, Psychology, and Education, 13(9), 1937-1960. https://doi.org/10.3390/ejihpe13090140

39. Shrestha, N. (2021). Factor analysis as a tool for survey analysis. American Journal of Applied Mathematics and Statistics, 9(1), 4–11. https://doi.org/10.12691/ajams-9-1-2

40. Su, J. and Yang, W. (2023). Unlocking the power of ChatGPT: a framework for applying generative AI in education. Ecnu Review of Education, 6(3), 355-366. https://doi.org/10.1177/20965311231168423

41. Taber, K.S. (2018). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. Res Sci Educ 48, 1273–1296. https://doi.org/10.1007/s11165-016-9602-2

42. Uddin, S., Albert, A., Ovid, A., & Alsharef, A. (2023). Leveraging chatbots to aid construction hazard recognition and support safety education and training. Sustainability, 15(9), 7121. https://doi.org/10.3390/su15097121

Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

43. Vincent-Lancrin, S. and R. van der Vlies (2020). "Trustworthy artificial intelligence (AI) in education: Promises and challenges," OECD Education Working Papers, No. 218, OECD Publishing, Paris, https://doi.org/10.1787/a6c90fa9-en.
44. Witkovský, V. (2019). Computing the exact distribution of Bartlett's test statistic by numerical inversion of its characteristic function. Journal of Applied Statistics, 47(13–15), 2749–2764. https://doi.org/10.1080/02664763.2019.1675608
45. Wood, E., Ange, B., & Miller, D. (2021). Are we ready to integrate artificial intelligence literacy into the medical school curriculum: students and a faculty survey. Journal of Medical Education and Curricular Development, 8, 238212052110240. https://doi.org/10.1177/23821205211024078
46. Yeadon, W., Inyang, O. O., Mizouri, A., Peach, A., & Testrow, C. P. (2023). The death of the short-form physics essay in the coming AI revolution. Physics Education, 58(3), 035027. https://doi.org/10.1088/1361-6552/acc5cf

Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY).To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/