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The Dual Impact of ChatGPT on Learning and Ethics among Bachelor of Science in Information Technology (BSIT) Students



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Abstract. This study examines the usage and perceptions of ChatGPT, an AI-driven language model, among Bachelor of Science in Information Technology (BSIT) students at the Nueva Ecija University of Science and Technology (NEUST) in Cabanatuan City, Philippines. Utilizing a descriptive research design, the study investigates both the learning outcomes and ethical concerns associated with ChatGPT's application in academic and professional tasks. The research focuses on how ChatGPT influences students' knowledge acquisition, study efficiency, and satisfaction, along with the ethical challenges perceived in relation to academic integrity. Data were collected using a structured survey from a sample of 200 students selected via stratified random sampling to ensure gender- and year-level representation. Data were analyzed using weighted means to measure satisfaction and ethical concerns, while qualitative responses underwent thematic analysis to explore students' perspectives on the ethical implications of the tool. The findings reveal that students view ChatGPT as a valuable aid in enhancing learning efficiency and accessing knowledge. However, they also acknowledge significant ethical challenges, including risks of academic dishonesty and over-reliance on AI. The study's key output is a policy brief with actionable recommendations for educators and policymakers, outlining guidelines for balanced AI usage and ethical frameworks to support responsible integration of AI technologies in education.

Keywords: ChatGPT; learning efficiency; academic enhancement; ethical concerns; artificial intelligence

1. Introduction

The rapid advancement of artificial intelligence (AI) has significantly impacted various fields; education is one of the most affected of these (Chen, 2020). In this context, Almulla and Ali (2024) articulated that the integration of AI into education is rapidly transforming traditional paradigms of teaching and learning. Of all the AI tools, ChatGPT—an AI-driven language model developed by OpenAI—has emerged as a transformative resource with the potential to

revolutionize student learning (Javaid et al., 2023). This study is distinctive in focusing specifically on Bachelor of Science in Information Technology (BSIT) students, a demographic noted for its early adoption of technological innovations (Mogavi et al., 2024). ChatGPT enhances engagement, critical thinking, and creativity, offering new possibilities for learning within information technology (IT) programs.

Despite its potential, the use of ChatGPT also introduces ethical dilemmas, raising concerns about academic integrity, over-reliance on automation, and the evolving role of human cognition in education (Rane, 2023). For the respondents in this study, ChatGPT has a dual impact; it is a valuable tool for problem-solving and personalized tutoring but also poses risks of plagiarism and intellectual dishonesty. Reliance on AI-generated solutions may undermine independent problem-solving skills and critical thinking abilities (Currie, 2023).

Furthermore, the ethical concerns extend to equity and accessibility. Unequal access to AI technologies like ChatGPT may exacerbate the digital divide, leading to disparities in academic performance and opportunities for skill development among students from diverse socio-economic backgrounds (Dakakni & Safa, 2023). The authenticity of student work and the implications for future employment are also critical, given that original thought and problem-solving are highly valued in the workforce (Chiu et al., 2024).

This research investigates the dual impact of ChatGPT on learning outcomes and ethical concerns among BSIT students, focusing on how this technology influences academic experiences and decision-making processes. It aims to produce a policy brief with actionable recommendations for educators and policymakers, addressing key findings related to learning benefits, ethical challenges, and equity issues. It also seeks to provide a deeper understanding of BSIT students' perceptions of the educational value of ChatGPT and the ethical implications of AI use in academia. The findings offer constructive recommendations for the responsible integration of AI in educational settings, serving as a foundation for institutional policy and AI tool development. Ultimately, this research aims to enhance educational practices that leverage the benefits of AI while mitigating its potential risks.

Review of the Related Literature

The Role of Artificial Intelligence in Education

AI is transforming education through tools like ChatGPT, which provide personalized learning experiences and real-time assistance. Chen et al. (2024) discuss how AI enhances learning by offering interactive tools. Fan and Zhong (2022) have found that AI supports teachers by automating administrative tasks, allowing them to focus on creativity and critical thinking. Meanwhile Shoaib (2024) notes the growing use of AI tutors in higher education.

ChatGPT significantly impacts academic learning by offering instant information and help with problem-solving. Almogren et al. (2024) report that students value

AI chatbots for their responsiveness, and Essel et al. (2024) emphasize their role in clarifying complex topics. Yilmaz and Yilmaz (2023) have found that students use ChatGPT for coding and academic writing, with Al-khresheh (2024) noting its effectiveness for those struggling with technical subjects. Furthermore, Parker et al. (2024) demonstrate how AI tools support students to develop technical and soft skills through simulations and feedback, while Tayan et al. (2023) demonstrate that frequent use of AI improves problem-solving in programming and data analysis. Minh (2024) indicates that engaging with AI enhances critical thinking by encouraging students to explore diverse perspectives.

Ethical Concerns Related to the Use of ChatGPT

Despite its advantages, the use of AI tools like ChatGPT in academic settings raises significant ethical issues. One primary concern is academic dishonesty. Smerdon (2024) argues that students may be tempted to misuse AI tools to generate assignments, leading to plagiarism and compromising academic integrity. Similarly, Moorhouse et al. (2023) caution that while AI can enhance learning, it must be used responsibly to avoid issues like over-reliance and dishonesty in completing academic tasks.

Privacy is another concern, as noted by Wu, Duan and Ni in 2024. ChatGPT and other AI tools collect vast amounts of user data to improve responses, leading to concerns about how these data are stored, used, and potentially shared. Diaz-Rodriguez et al. (2023) discuss the risks associated with data security and privacy in AI applications, emphasizing the need for transparent policies and safeguards.

Impact on Teacher-Student Interaction

The adoption of AI tools, such as ChatGPT, in education has sparked debates about the impact on teacher-student relationships. Markauskaite et al. (2022) argue that while AI can assist with the delivery of content, it cannot replace the emotional and relational aspects of teaching that are crucial for student development. Xia et al. (2022) have also highlighted in their research that AI lacks the ability to understand students' emotional needs, which is an essential aspect of education.

Furthermore, Fathi et al. (2024) warn of the risk that AI tools may create a more transactional learning environment, where students rely solely on chatbots for answers and miss out on the critical guidance that teachers provide.

Equity, Access, and Student Perceptions of AI in Learning

Concerns surrounding AI tools like ChatGPT include issues relating to equity and access. Li (2023) argues that while AI has the potential to democratize education, students from underprivileged backgrounds may have limited access to these technologies, exacerbating the digital divide. Bhutoria (2022) cautions that students without access to technology risk being left behind as AI becomes more integrated into educational systems. Yang et al. (2021) stress the need for schools to ensure that AI tools are accessible to all students to prevent inequality in educational outcomes. This concern is further emphasized by Song et al. (2024), who highlight the importance of inclusivity in the design and deployment of AI

educational tools. Students' perceptions of ChatGPT vary based on their familiarity with the tool and the extent to which they are comfortable with AI technologies. Jo (2023) found that while many students appreciate the benefits of AI tools, they do have persistent apprehensions relating to trust and reliability. Darvishi et al.'s (2024) research indicates that some students view AI tools as supplementary aids rather than replacements for traditional learning methods. Furthermore, Dai et al. (2023) have found that students more familiar with AI technologies are more likely to embrace ChatGPT as a valuable academic resource. In contrast, Hornberger et al. (2023) note that students with limited exposure to AI express greater concerns regarding its reliability and ethical implications.

Recommendations for Ethical Use of AI in Education

Given the ethical concerns surrounding ChatGPT, several studies recommend implementing guidelines and frameworks to ensure that it is used responsibly. Fedele et al. (2024) suggest that educational institutions should establish clear policies on the appropriate use of AI tools, including guidelines on academic honesty and the protection of privacy.

Adams et al. (2023) recommend that AI tools should be integrated into the curriculum alongside ethical training to ensure that students understand the consequences of misuse. Lin et al. (2023) also argue that educators should play an active role in teaching students how to use AI responsibly, emphasizing critical thinking over convenience.

The Future of AI and ChatGPT in Education

The future of AI in education looks promising but demands there is a need for careful consideration of its implications. Alam (2023) notes that AI will become an essential tool for improving educational efficiency and enhancing learning experiences. However, Khogali and Mekid (2023) caution that without proper ethical guidelines, widespread adoption could lead to unintended consequences. Abulibdeh et al. (2024) emphasize the need for collaboration among technologists, educators, and policymakers to create tools that address these ethical concerns. Ali et al. (2024) highlight the importance of ongoing research into the long-term effects of AI on student learning. Overall, while ChatGPT and other AI tools offer significant potential, they also present critical ethical challenges, necessitating responsible use, clear guidelines, and equitable access to ensure that technology enhances educational experiences rather than undermines them.

Research Problems

This research addresses several key questions: the frequency and purpose of ChatGPT usage among BSIT students, the perceived advantages and limitations, ethical considerations, and the impact on learning and skill development. Specifically, it aims to assess ChatGPT's effectiveness in supporting academic tasks, identifying obstacles students encounter, understanding students' ethical perceptions, and evaluating how the tool influences students' learning attitudes and their acquisition of skills. By examining these dimensions, the study sheds light on how AI tools can be integrated responsibly into educational practices.

Several variables were examined, including demographic factors such as age, gender, academic year, field of study, and prior experience with AI tools, as well as details about the frequency with which participants use ChatGPT and the purposes of that usage. Students' perceptions of ChatGPT's benefits, challenges, ethical issues, and the tool's impact on their learning and skill development were also explored.

Significance of the Study

The study is of significance for multiple stakeholders. For educators and academic institutions, it offers insights into responsible integration of AI, supporting learning while preserving academic integrity. Policymakers may find it helpful when formulating regulations on AI use in order to ensure that digital divides are bridged and students have equitable access to learning tools. Developers of AI systems, such as ChatGPT, may use these findings to refine their tools to better meet educational needs. For students, this research encourages a more informed approach to AI, emphasizing ethical and thoughtful usage.

2. Methodology

2.1 Research Design

This study employed a descriptive quantitative research design to analyze the perceptions of BSIT students regarding the impact of ChatGPT on their learning outcomes and the ethical concerns associated with its use.

2.2 Participants and Respondent Profiles

The sample consisted of 200 first- and second-year BSIT students from the Nueva Ecija University of Science and Technology (NEUST) as shown in Figure 1 below. None of the respondents had prior exposure to ChatGPT when they were still in high school. Stratified random sampling was used to ensure gender- and year-level representation. The profile of the respondents according to gender is shown in the figure below.

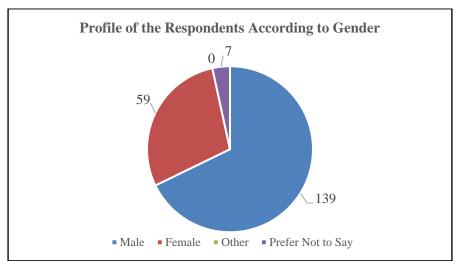


Figure 1: Gender Demographic

The gender distribution of the respondents in this study reveals that the majority were male, with 139 participants, followed by 59 female respondents.

Additionally, a small proportion of the respondents, specifically seven individuals, preferred not to disclose their gender, and no respondents identified with a gender other than male or female. This distribution suggests that the data collected in this research may be more reflective of the male student population, which could influence the overall findings on perceptions of ChatGPT among BSIT students at NEUST.

The predominance of male respondents underscores the importance of considering gender as a variable when analyzing the data, as it may affect how students interact with and perceive AI tools such as ChatGPT. Furthermore, of the fact that the sample included respondents who chose not to disclose their gender indicates a level of sensitivity or awareness regarding gender privacy among the student population, which may also be relevant in interpreting the study's results.

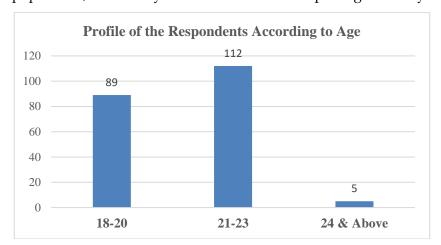


Figure 2: Age Demographic

The age distribution of participants, shown in Figure 2, indicates that the majority fell within the 21-23 age range (49%), followed by those aged 18-20 (39%), with only a small proportion (2%) aged 24 and above. This suggests that the sample largely consisted of traditional college-age students. This may have implications for the study findings in terms of participant perspectives, learning preferences, and adaptability to educational methods or technologies. The predominance of younger participants aligns with the demographic trends typical in higher education. This age concentration highlights the importance of tailoring educational approaches to meet the specific needs of this group, while future research might explore the experiences of older students to better understand their unique challenges and support requirements.

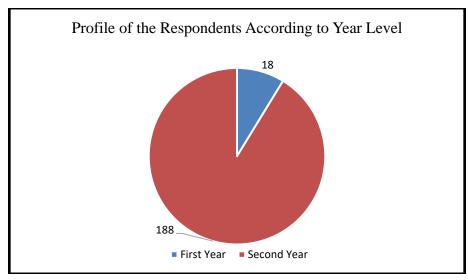


Figure 3: Year Level of the Respondents

Figure 3 illustrates the distribution of respondents according to their year level. It reveals a significant disparity between the two groups. The majority of respondents were second-year students, comprising 188 participants, while firstyear students made up a much smaller proportion of the sample, with only 18 respondents. This indicates that the perceptions of ChatGPT gathered in this study are predominantly reflective of second-year BSIT students at NEUST. The substantial difference in representation means that the findings are more reflective of the experiences and perspectives of students who have already spent more time in the program. As such, the data may capture the viewpoints of students who have a more established understanding of the academic environment and the role of AI tools in their studies. The limited representation of first-year students may indicate that their perceptions are underrepresented, which could be a consideration when generalizing the results across all year levels. This imbalance highlights the importance of accounting for year level when analyzing the data, as this factor may affect the overall conclusions regarding the students' perceptions of ChatGPT.

The data collected from the survey in relation to ChatGPT usage, shown in Figure 4, reveals significant insights indicating that most respondents use the AI tool. A total of 206 students participated in the study; of these 166 students (80.58%) reported being users of ChatGPT, while 40 students (19.42%) indicated that they were non-users. This distribution highlights the predominance of ChatGPT usage among the respondents.

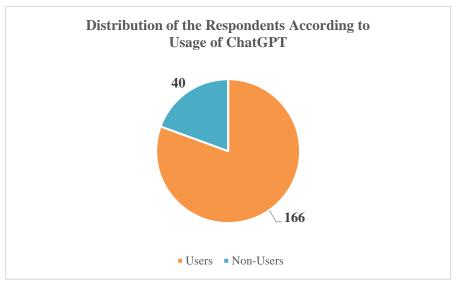


Figure 4: Percentage of ChatGPT Users

The percentage of users suggests that ChatGPT is becoming an integral academic tool among BSIT students. Its wide adoption could be attributable to its capacity to aid in learning, problem-solving, and research tasks. However, a significant minority of students in the sample (nearly 20%) remain non-users, possibly due to ethical concerns, unfamiliarity with the tool, or preference for other resources. This is supported by the research of Yang and Li (2024).

Data on usage are crucial to understanding the context in which ChatGPT is used by students, particularly considering that most respondents were male, second-year students, and engaged in traditional learning modes. These factors could influence both the frequency and nature of ChatGPT usage and the ethical concerns surrounding it.

2.3 Data Collection

Data were collected through a Global ChatGPT Student Survey distributed via Facebook messenger and electronic mail. This survey tool was reviewed and approved by several relevant ethics committees/institutional review boards across multiple countries, including Algeria, Cyprus, Ecuador, Italy, Japan, Luxembourg, Saudi Arabia, and the United Kingdom.

The data were collected through an online questionnaire attached to the messages requesting participation. The survey was conducted using the web application 1KA (One Click Survey; https://www.1ka.si/d/en). Since the questionnaire required participants to have prior experience with ChatGPT, it was offered in full only to those who had used ChatGPT, while participants who had not used ChatGPT were offered only questions about sociodemographic characteristics, additional study, and personal information; they were also given the option to receive the survey results.

Since the questionnaire was prepared in seven different languages, the language being used for each version of the survey was given as a code in the dataset, i.e., English (EN), Italian (IT), Spanish (ES), Turkish (TR), Japanese (JP), Arabic (AR),

and Hebrew (HE). The procedures for this survey complied with the provisions of the Declaration of Helsinki for research involving human participants and were approved by the ethical committees of several higher education institutions involved in its delivery (Ravšelj et al., 2024). This adaptation ensured that the study was grounded in a globally recognized framework, allowing for broader contextualization of the findings within the existing literature on ChatGPT usage.

The survey comprised three main sections:

- 1. ChatGPT Usage and Learning Outcomes. Questions in this section focused on how frequently students used ChatGPT for academic tasks (e.g., coding, academic writing, research assistance) and its perceived impact on learning.
- 2. Satisfaction with ChatGPT. Respondents rated their satisfaction with the tool's ability to assist with academic and personal tasks, compared to other platforms like Google.
- 3. Ethical Concerns. This section explored students' views on ethical challenges, including potential academic dishonesty, invasion of privacy, and reduced human interaction. Students were not allowed to share their name in the survey in order to protect their privacy. In addition, another section was included to look into the ethical considerations of using ChatGPT.

2.4 Data Analysis

In this survey, inferential statistics using Excel were employed to analyze the collected data, specifically utilizing frequency counts and percentages to quantify the responses of BSIT students regarding their perceptions and experiences with ChatGPT. Frequency analysis provided insights into how often particular responses were selected, allowing for a clear understanding of trends and patterns within the data. By calculating percentages, the analysis highlighted the proportion of students who expressed specific views on learning benefits, ethical challenges, and equity issues related to the use of ChatGPT. A 5-point Likert scale was used to describe the responses of the participants, where: 5 meant Strongly Agree; 4 meant Agree; 3 meant Neutral; 2 meant Disagree; and 1 meant Strongly Disagree.

3. Results And Discussion

This section presents the findings from BSIT students' evaluations of ChatGPT's perceived impact on learning and academic performance, alongside insights into ethical considerations and overall satisfaction.

3.1 Learning and Academic Enhancement

The data in Table 1 examine BSIT students' perceptions of how ChatGPT supports their learning and academic progress. The weighted mean (Wm) and verbal description (VD) indicate a generally positive outlook.

Table 1: Perceived Learning and Academic Enhancement Addressed with ChatGPT

No	ChatGPT can	SA	Α	N	D	SD	Wm	VD
1	enhance my access to the sources of knowledge	24	64	72	5	1	3.63	Agree
2	improve my general knowledge	23	71	64	7	1	3.65	Agree
3	improve my specific knowledge	26	71	65	3	1	3.71	Agree
4	provide me with personalized education	20	64	72	7	3	3.55	Agree
5	increase my study efficiency	22	64	70	5	5	3.56	Agree
6	increase my motivation to study	21	54	73	14	4	3.45	Agree
7	facilitate completing my studies	21	57	75	7	6	3.48	Agree
8	improve my engagement in class discussions	14	58	76	13	5	3.38	Neutral
9	enhance my ability to meet assignment deadlines	25	58	71	8	4	3.55	Agree
10	improve the quality of my assignments	28	53	73	8	4	3.56	Agree

SA – Strongly Agree (4.21 – 5.00); A – Agree (3.41 – 4.20); N – Neutral (2.61 – 3.40); D – Disagree (1.81 – 2.60); SD – Strongly Disagree (1.00 – 1.80); Wm – Weighted Mean; VD – Verbal Description

Students strongly agree that ChatGPT can enhance their access to sources of knowledge (Wm = 3.63), improve their general (Wm = 3.65) and specific knowledge (Wm = 3.71), and provide personalized education (Wm = 3.55). These high scores indicate that students view ChatGPT as a valuable tool for expanding their learning resources, gaining deeper insights, and receiving tailored educational support. The findings suggest that ChatGPT significantly supports independent learning by enhancing knowledge acquisition and helping students manage assignments and deadlines, aligning with Saif et al. (2024), who have found that using ChatGPT reduces stress. This implies that ChatGPT can be a useful supplementary tool in the classroom, freeing up time for educators to focus on discussions and higher-order thinking tasks. However, with a more neutral impact on class engagement (Wm = 3.38), ChatGPT's role in promoting interactive participation appears limited, a point echoed by Al Shloul et al. (2024), who note both its educational benefits and potential limitations. To ensure that AIfacilitated learning complements rather than detracts from active classroom engagement, teachers may need to integrate collaborative activities intentionally. In sum, while ChatGPT is a valuable academic resource, a balanced approach is essential to maintain both individual learning and interactive classroom dynamics.

3.2 Ethical and Other Concerns Related to ChatGPT

Table 2 explores BSIT students' perceptions of ethical and other concerns associated with ChatGPT. The responses are largely neutral, reflecting cautious views on the potential negative impacts.

ChatGPT might... SA VD A Wm 36 87 25 12 2.99 Neutral encourage unethical behavior. 6 encourage students to cheat 15 70 22 2.99 2 (i.e., copy answers during test, 36 23 Neutral encourage students to 2.99 3 14 34 71 30 17 Neutral plagiarize. threaten the ethics of the 2.97 4 11 34 75 31 15 Neutral study. mislead with inaccurate 5 11 24 86 29 15 2.90 Neutral information. 10 15 84 32 25 2.72 Neutral 6 invade privacy. 7 9 37 68 30 22 2.89 Neutral reduce human interaction. 9 34 25 2.80 8 62 36 Neutral replace formal education. 11 9 increase social isolation. 33 70 32 20 2.90 Neutral hinder learning by doing the 10 13 9 3.07 32 84 28 Neutral work for students.

Table 2: Ethical and Other Concerns related to ChatGPT

 \overline{SA} – Strongly Agree (4.21 – 5.00); A – Agree (3.41 – 4.20)); N – Neutral (2.61 – 3.40); D – Disagree (1.81 – 2.60); \overline{SD} – Strongly Disagree (1.00 – 1.80); \overline{Wm} – Weighted Mean; \overline{VD} – Verbal Description

Students gave a broadly neutral response to whether or not ChatGPT might encourage unethical behavior (Wm = 2.99), academic dishonesty such as cheating (Wm = 2.99), or plagiarism (Wm = 2.99). This neutrality suggests that while students recognize these risks, they do not overwhelmingly believe that ChatGPT significantly contributes to these issues. Similarly, concerns about ChatGPT threatening the ethics of academic studies (Wm = 2.97) and providing inaccurate information (Wm = 2.90) garnered a neutral response, indicating a balanced view on these potential ethical risks. In addition, the concern that ChatGPT might hinder learning by doing the work for students (Wm = 3.07) was the issue that appeared to be most significant to students but it still fell within the neutral range.

The findings suggest that while BSIT students recognize potential ethical concerns around ChatGPT, they maintain a balanced perspective that implies cautious optimism. This neutrality has important implications for classroom practice. Instructors may need to address the ethical use of ChatGPT explicitly, incorporating discussions on academic honesty and critical thinking into their classrooms to mitigate the risks of plagiarism and over-reliance on ChatGPT. Since students perceive a risk to human interaction and collaborative learning, teachers might focus on blended approaches, where ChatGPT serves as a supplemental resource while classroom activities foster interpersonal skills and engagement. As Chan and Tsi (2024) argue, AI cannot replicate essential human qualities in teaching, such as emotional intelligence and critical judgment, reinforcing the role of teachers in guiding AI integration. Thus, educators can leverage ChatGPT's benefits for individualized learning support while emphasizing ethical considerations and maintaining strong peer and teacher-student interactions to create a balanced and enriched learning environment.

3.3 Ethical and Other Considerations

3.3.1 Ethical Considerations in Relation to the Use of ChatGPT

Table 3.1 assesses students' views on ethical considerations for ChatGPT usage, with a generally neutral stance on disclosure and transparency practices.

Table 3.1: Ethical Considerations in Relation to the Use of ChatGPT

No	Students should	SA	A	N	D	SD	Wm	VD
1	consult with the professors about using ChatGPT.	8	41	98	11	8	3.18	Neutral
2	disclose their use of ChatGPT to their professors.	5	26	100	23	12	2.93	Neutral
3	report any unethical use of ChatGPT by colleagues to their professors.	8	30	96	20	12	3.01	Neutral
4	take appropriate measures to protect their own personal information.	18	43	90	8	7	3.34	Neutral

 $SA-Strongly\ Agree\ (4.21-5.00);\ A-Agree\ (3.41-4.20));\ N-Neutral\ (2.61-3.40);\ D-Disagree\ (1.81-2.60);\ SD-Strongly\ Disagree\ (1.00-1.80);\ Wm-Weighted\ Mean;\ VD-Verbal\ Description$

The responses to this issue indicate neutrality in relation to the importance of consulting professors (Wm = 3.18) and disclosing ChatGPT usage (Wm = 2.93). However, students agreed slightly more on the importance of protecting personal information (Wm = 3.34), suggesting that they are aware of privacy concerns in ChatGPT use. These findings point to a need for discussions around ethical practices for AI use in education. Similarly, the perception that students should report any unethical use of ChatGPT by colleagues to their professors (Wm = 3.01) garnered a neutral response. This indicates a balanced view on responsibility in relation to unethical behavior but does not reflect a strong inclination towards actively reporting such issues. The findings regarding students' perceptions of ethical considerations related to ChatGPT indicate significant implications for classroom practice. The neutral responses suggest a need for educators to address ethical concerns by incorporating structured discussions on the responsible use of AI tools, emphasizing digital literacy, protecting personal information, and recognizing issues like academic dishonesty and plagiarism to foster a culture of integrity. Establishing clear guidelines for acceptable AI use in academic environments is crucial, as is helping students understand the line between utilizing ChatGPT for support and relying on it to complete assignments. Additionally, creating opportunities for critical thinking through real-world case studies involving AI can enhance students' understanding of ethical dilemmas. Research by Stahl and Eke (2024) emphasizes the importance of applying the established ethics of technology methodologies to guide discourse around emerging technologies like ChatGPT, advocating for a balanced ethical perspective to maximize the benefits while addressing the potential downsides. Finally, ongoing professional development for educators on AI technologies can better equip them to guide students towards responsible usage. By embedding these practices into the curriculum, educators can cultivate a more informed student body prepared to engage thoughtfully with AI tools like ChatGPT, ensuring ethical challenges are addressed while leveraging its benefits. As articulated by Mahsun et al. (2024), understanding these challenges, opportunities, and solutions is essential to harnessing the full potential of ChatGPT in improving learning and character education.

3.3.2 Satisfaction with and Attitudes Toward ChatGPT

Table 3.2 provides an overview of BSIT students' satisfaction with ChatGPT in comparison to other resources and interactions. The weighted mean (Wm) and verbal description (VD) indicate varying levels of agreement about ChatGPT's utility, ease of interaction, and quality of assistance.

Table 3.2: Satisfaction with ChatGPT

No	Item Statements	SA	A	N	D	SD	Wm	VD
1	I find ChatGPT more useful than Google or other web search engines.	21	54	78	12	1	3.49	Agree
2	It is easier for me to interact with ChatGPT than with my professors.	11	41	85	21	8	3.16	Neutral
3	It is easier for me to interact with ChatGPT than with my colleagues.	10	33	84	28	11	3.02	Neutral
4	The information I get from ChatGPT is clearer than the one provided by my professors.	14	33	86	26	7	3.13	Neutral
5	I am satisfied with the level of assistance provided by ChatGPT.	20	63	76	6	1	3.57	Agree
6	I am satisfied with the quality of information provided by ChatGPT.	12	63	84	7	0	3.48	Agree
7	I am satisfied with the accuracy of the information provided by ChatGPT.	15	47	98	6	0	3.43	Agree

 $SA-Strongly\ Agree\ (4.21-5.00);\ A-Agree\ (3.41-4.20));\ N-Neutral\ (2.61-3.40);\ D-Disagree\ (1.81-2.60);\ SD-Strongly\ Disagree\ (1.00-1.80);\ Wm-Weighted\ Mean;\ VD-Verbal\ Description$

Students expressed strong satisfaction with ChatGPT's usefulness compared to Google or other web search engines (Wm = 3.49). This indicates that students find ChatGPT to be a valuable tool, likely due to its ability to provide tailored responses and interactive support. Similarly, satisfaction with the level of assistance (Wm = 3.57), the quality of information (Wm = 3.48), and the accuracy of the information (Wm = 3.43) provided by ChatGPT is notably high, reflecting a positive perception of its performance and reliability.

In contrast, however, students' responses were more neutral when comparing their interactions with ChatGPT to interactions with professors (Wm = 3.16) and colleagues (Wm = 3.02). This neutrality suggests that while ChatGPT is seen as a useful tool, it does not necessarily replace human interactions in educational contexts. Students were also neutral about whether ChatGPT offers clear information compared to professors (Wm = 3.13), indicating that students perceive both sources as having their own merits.

Overall, the data highlights that BSIT students are generally satisfied with ChatGPT's usefulness, assistance, and quality of information. However, the neutral responses when comparing ChatGPT with interactions with professors

and colleagues suggest that ChatGPT is appreciated for its functionality but is not viewed as a complete substitute for human interaction in academic settings. According to Haleem et al. (2022), it is crucial to carefully assess the possible effects of ChatGPT and take precautions to ensure it is utilized morally and responsibly. While many people have praised the tool for increasing their productivity, others are cautious about it for understandable reasons. Schools, colleges, and education boards have expressed concerns about employing this technology for submissions and examinations.

4. Conclusion and Recommendations

This study highlights the dual role of ChatGPT in enhancing learning and raising ethical concerns among BSIT students. While ChatGPT is perceived as a valuable tool for improving knowledge, study efficiency, and assignment quality, significant ethical issues, such as academic dishonesty and reduced human interaction, must be addressed. To ensure that students can benefit from ChatGPT while minimizing the ethical risks it poses, educational institutions should develop clear guidelines for using it responsibly. Faculty members should encourage transparency about its usage and provide students with guidance on how to integrate AI tools into their academic work ethically. Additionally, further training on the limitations and responsible use of AI tools like ChatGPT is essential to prevent its misuse and ensure that students engage with the technology in a way that supports their academic integrity.

Based on the findings of this study, the following recommendations are proposed:

- 1. Universities should establish clear guidelines for the ethical use of AI tools like ChatGPT, emphasizing academic integrity and responsible use; the researcher recommends policy actions, including establishing usage guidelines, promoting ethical AI education, fostering human-AI collaboration, and creating regulatory frameworks to protect data privacy and ensure responsible use.
- 2. Ethical education on the use of AI should be incorporated into the curriculum, helping students understand both the potential and limitations of tools like ChatGPT.
- 3. Students should be encouraged to openly disclose their use of ChatGPT in assignments and engage in discussions with professors on how to ethically integrate AI tools into their studies.
- 4. Despite the advantages of AI, institutions should continue to emphasize the importance of human interaction, collaboration, and participation in learning environments.
- 5. Subsequent investigations should be undertaken incorporating qualitative approaches to capture more nuanced perspectives and experiences of students in relation to ChatGPT. Additionally, researchers should focus on specific areas such as the impact of AI on critical thinking, variations in perceptions across different educational contexts, and the effectiveness of pedagogical strategies to promote responsible AI use in learning environments.

5. References

Abulibdeh, A., Zaidan, E., & Abulibdeh, R. (2024). Navigating the confluence of artificial intelligence and education for sustainable development in the era of industry 4.0: Challenges, opportunities, and ethical dimensions. *Journal of Cleaner Production*, 140527. https://doi.org/10.1016/j.jclepro.2023. 140527

- Al-khresheh, M. H. (2024). Bridging technology and pedagogy from a global lens: Teachers' perspectives on integrating ChatGPT in English language teaching. *Computers and Education: Artificial Intelligence*, 6, 100218. https://doi.org/10.1016/j.caeai.2024.100218
- Al Shloul, T., Mazhar, T., Iqbal, M., yaseen Ghadi, Y., Malik, F., & Hamam, H. (2024). Role of activity-based learning and ChatGPT on students' performance in education. *Computers and Education: Artificial Intelligence*, 100219. https://doi.org/10.1016/j.caeai.2024.100219
- Alam, A. (2023). Harnessing the power of AI to create intelligent tutoring systems for enhanced classroom experience and improved learning outcomes. *Intelligent Communication Technologies and Virtual Mobile Networks*, 571-591. https://doi.org/10.1007/978-981-99-1767-9_42
- Ali, O., Murray, P. A., Momin, M., Dwivedi, Y. K., & Malik, T. (2024). The effects of artificial intelligence applications in educational settings: Challenges and strategies. *Technological Forecasting and Social Change*, 199, 123076. https://doi.org/10.1016/j.techfore.2023.123076
- Almogren, A. S., Al-Rahmi, W. M., & Dahri, N. A. (2024). Exploring factors influencing the acceptance of ChatGPT in higher education: A smart education perspective. *Heliyon*. https://doi.org/10.1016/j.heliyon. 2024.e31887
- Almulla, M., & Ali, S. I. (2024). The Changing Educational Landscape for Sustainable Online Experiences: Implications of ChatGPT in Arab Students' Learning Experience. *International Journal of Learning, Teaching and Educational Research*, 23(9). https://doi.org/10.26803/jilter.23.9.15
- Bhutoria, A. (2022). Personalized education and artificial intelligence in the United States, China, and India: A systematic review using a human-in-the-loop model. *Computers and Education: Artificial Intelligence*, 3, 100068. https://doi.org/10.1016/j.caeai.2022.100068
- Chan, C. K. Y., & Tsi, L. H. (2024). Will generative AI replace teachers in higher education? A study of teacher and student perceptions. *Studies in Educational Evaluation*, 83, 101395. https://doi.org/10.1016/j. stueduc.2024.101395
- Chen, L., Chen, P., and Z. Lin (2020). Artificial Intelligence in Education: A Review. *IEEE Access*, vol. 8, 75264-75278. https://doi.org/10.1109/access.2020.2988510
- Chen, X., Xie, H., Zou, D., & Hwang, G. J. (2020). Application and theory gaps during the rise of artificial intelligence in education. *Computers and Education: Artificial Intelligence*, 1, 1000 02. https://doi.org/10.1016/j.caeai.2020.100002
- Chiu, T. K., Ahmad, Z., Ismailov, M., & Sanusi, I. T. (2024). What are artificial intelligence literacy and competency? A comprehensive framework to support them. *Computers and Education Open*, 6, 100171. https://doi.org/10.1016/j.caeo.2024.100171
- Currie, G. M. (2023). Academic integrity and artificial intelligence: is ChatGPT hype, hero or heresy. In *Seminars in Nuclear Medicine*, 53, 719-730). https://doi.org/10.1053/j.semnuclme d.2023.04.008
- Dai, Y., Liu, A., & Lim, C. P. (2023). Reconceptualizing ChatGPT and generative AI as a student-driven innovation in higher education. *Procedia CIRP*, 119, 84-90. https://doi.org/10.1016/j.procir.2023.05.002
- Dakakni, D., & Safa, N. (2023). Artificial intelligence in the L2 classroom: Implications and challenges on ethics and equity in higher education: A 21st century Pandora's box. *Computers and Education: Artificial Intelligence*, 5, 100179. https://doi.org/10.1016/j.ca eai.2023.100179

- Darvishi, A., Khosravi, H., Sadiq, S., Gašević, D., & Siemens, G. (2024). Impact of AI assistance on student agency. *Computers & Education*, 210, 104967. https://doi.org/10.1016/j.compedu. 2023.104967
- Díaz-Rodríguez, N., Del Ser, J., Coeckelbergh, M., de Prado, M. L., Herrera-Viedma, E., & Herrera, F. (2023). Connecting the dots in trustworthy Artificial Intelligence: From AI principles, ethics, and key requirements to responsible AI systems and regulation. *Information Fusion*, 99, 101896. https://doi.org/10.1016/j.inffus.2023.101896
- Essel, H. B., Vlachopoulos, D., Essuman, A. B., & Amankwa, J. O. (2024). ChatGPT effects on cognitive skills of undergraduate students: Receiving instant responses from AI-based conversational large language models (LLMs). *Computers and Education: Artificial Intelligence*, 6, 100198. https://doi.org/10.1016/j.caeai.2023.100198
- Fan, X., & Zhong, X. (2022). Artificial intelligence-based creative thinking skill analysis model using human–computer interaction in art design teaching. *Computers and Electrical Engineering*, 100, 107957. https://doi.org/10.1016/j.compeleceng.2022.107957
- Fathi, J., Rahimi, M., & Derakhshan, A. (2024). Improving EFL learners' speaking skills and willingness to communicate via artificial intelligence-mediated interactions. *System*, 121, 103254. https://doi.org/10.1016/j.system. 2024.103254
- Fedele, A., Punzi, C., & Tramacere, S. (2024). The ALTAI checklist as a tool to assess ethical and legal implications for a trustworthy AI development in education. *Computer Law & Security Review*, 53, 105986. https://doi.org/10.1016/j.inffus.2023.101896
- Haleem, A., Javaid, M., & Singh, R. P. (2022). An era of ChatGPT as a significant futuristic support tool: A study on features, abilities, and challenges. *BenchCouncil transactions on benchmarks, standards and evaluations*, 2(4), 100089. https://doi.org/10.1016/j.tbench.2023. 100089
- Hornberger, M., Bewersdorff, A., & Nerdel, C. (2023). What do university students know about Artificial Intelligence? Development and validation of an AI literacy test. *Computers and Education: Artificial Intelligence*, 5, 100165. https://doi.org/10.1016/j.caeai.2023.100165
- Javaid, M., Haleem, A., Singh, R. P., Khan, S., & Khan, I. H. (2023). Unlocking the opportunities through ChatGPT Tool towards ameliorating the education system. *BenchCouncil Transactions on Benchmarks, Standards and Evaluations*, 3(2), 100115. https://doi.org/10.1016/j.tbench.2023.100115
- Jo, H. (2023). Understanding AI tool engagement: A study of ChatGPT usage and word-of-mouth among university students and office workers. *Telematics and Informatics*, 85, 102067. https://doi.org/10.1016/j.tele.2023.102067
- Khogali, H. O., & Mekid, S. (2023). The blended future of automation and AI: Examining some long-term societal and ethical impact features. *Technology in Society*, 73, 102232. https://doi.org/10.1016/j.techsoc.2023.102232
- Li, H. (2023). AI in Education: Bridging the Divide or Widening the Gap? Exploring Equity, Opportunities, and Challenges in the Digital Age. *Advances in Education, Humanities and Social Science Research*, 8(1), 355-355. https://doi.org/10.56028/aehssr.8.1.355.2023
- Lin, X. F., Wang, Z., Zhou, W., Luo, G., Hwang, G. J., Zhou, Y., ... & Liang, Z. M. (2023). Technological support to foster students' artificial intelligence ethics: An augmented reality-based contextualized dilemma discussion approach. *Computers & Education*, 201, 104813. https://doi.org/10.1016/j.compedu.2023.104813
- Mahsun, M., Ali, M., Ekaningrum, I. R., & Ibda, H. (2024). Trend of Using ChatGPT in Learning Process and Character Education: A Systematic Literature

- Review. *International Journal of Learning, Teaching and Educational Research*, 23(5), 387-402. https://doi.org/10.26803/ijlte r.23.5.20
- Markauskaite, L., Marrone, R., Poquet, O., Knight, S., Martinez-Maldonado, R., Howard, S., ... & Siemens, G. (2022). Rethinking the entwinement between artificial intelligence and human learning: What capabilities do learners need for a world with AI?. *Computers and Education: Artificial Intelligence*, 3, 100056. https://doi.org/10.1016/j.caeai.2022.100056
- Minh, A. N. (2024). Leveraging ChatGPT for enhancing English writing skills and critical thinking in university freshmen. *Journal of Knowledge Learning and Science Technology ISSN:* 2959-6386 (online), 3(2), 51-62. https://doi.org/10.60087/jklst.vol3.n2.p62
- Mogavi, R. H., Deng, C., Kim, J. J., Zhou, P., Kwon, Y. D., Metwally, A. H. S., ... & Hui, P. (2024). ChatGPT in education: A blessing or a curse? A qualitative study exploring early adopters' utilization and perceptions. *Computers in Human Behavior: Artificial Humans*, 2(1), 100027. https://doi.org/10.1016/j.chbah.2023.100027
- Moorhouse, B. L., Yeo, M. A., & Wan, Y. (2023). Generative AI tools and assessment: Guidelines of the world's top-ranking universities. *Computers and Education Open*, *5*, 100151. https://doi.org/10.1016/j.caeo.2023.100151
- Parker, L., Carter, C., Karakas, A., Loper, A. J., & Sokkar, A. (2024). Graduate instructors navigating the AI frontier: The role of ChatGPT in higher education. *Computers and Education Open*, 6, 100166. https://doi.org/10.1016/j.caeo.2024.100166
- Rane, N. L., Choudhary, S. P., Tawde, A., & Rane, J. (2023). ChatGPT is not capable of serving as an author: Ethical concerns and challenges of large language models in education. *International Research Journal of Modernization in Engineering Technology and Science*, *5*(10), 851-874. https://www.doi.org/ 10.56726/IRJMETS45212
- Ravšelj, D., Aristovnik, A., Keržič, D., Tomaževič, N., Umek, L., Brezovar, N., & et al. (2024). Higher education students' early perceptions of ChatGPT: Global survey data. *Mendeley Data*. https://doi.org/10.17632/ymg9nsn6kn
- Saif, N., Khan, S. U., Shaheen, I., ALotaibi, F. A., Alnfiai, M. M., & Arif, M. (2024). Chat-GPT; validating Technology Acceptance Model (TAM) in education sector via ubiquitous learning mechanism. *Computers in Human Behavior*, 154, 108097. https://doi.org/10.1016/j.chb.2023. 108097
- Shoaib, M., Sayed, N., Singh, J., Shafi, J., Khan, S., & Ali, F. (2024). AI student success predictor: Enhancing personalized learning in campus management systems. *Computers in Human Behavior*, 158, 108301. https://doi.org/10.1016/j.chb.2024.108301
- Smerdon, D. (2024). AI in essay-based assessment: Student adoption, usage, and performance. *Computers and Education: Artificial Intelligence*, 100288. Smerdon, D. (2024). AI in essay-based assessment: Student adoption, usage, and performance. *Computers and Education: Artificial Intelligence*, 100288. https://doi.org/10.1016/j.caeai.2024.100288
- Song, Y., Weisberg, L. R., Zhang, S., Tian, X., Boyer, K. E., & Israel, M. (2024). A framework for inclusive AI learning design for diverse learners. *Computers and Education: Artificial Intelligence*, 100212. https://doi.org/10.1016/j.caeai.2024.100212
- Stahl, B. C., & Eke, D. (2024). The ethics of ChatGPT-Exploring the ethical issues of an emerging technology. *International Journal of Information Management*, 74, 102700. https://doi.org/10.1016/j.ijinfo.mgt.2023.102700
- Tayan, O., Hassan, A., Khankan, K., & Askool, S. (2023). Considerations for adapting higher education technology courses for AI large language models: A critical review of the impact of ChatGPT. *Machine Learning with Applications*, 100513. https://doi.org/10.1016/j.mlwa.20 23.100513

- Teng, M. F. (2024). "ChatGPT is the companion, not enemies": EFL learners' perceptions and experiences in using ChatGPT for feedback in writing. Computers and Education: Artificial Intelligence, 7, 100270. https://doi.org/10.1016/j.caeai.2024.100270
- Wu, X., Duan, R., & Ni, J. (2024). Unveiling security, privacy, and ethical concerns of ChatGPT. *Journal of Information and Intelligence*, 2(2), 102-115. https://doi.org/10.1016/j.jii xd.2023. 10.007
- Xia, Q., Chiu, T. K., Lee, M., Sanusi, I. T., Dai, Y., & Chai, C. S. (2022). A self-determination theory (SDT) design approach for inclusive and diverse artificial intelligence (AI) education. *Computers & Education*, 189, 104582. https://doi.org/10.1016/j.compedu.2022.10 4582
- Yang, L., & Li, R. (2024). ChatGPT for L2 learning: Current status and implications. *System*, 124, 103351. https://doi.org/10.1016/j.system.2024.103351
- Yang, S. J., Ogata, H., Matsui, T., & Chen, N. S. (2021). Human-centered artificial intelligence in education: Seeing the invisible through the visible. *Computers and Education:*Artificial Intelligence, 2, 100008. https://doi.org/10.1016/j.caeai.2021.100008
- Yilmaz, R., & Yilmaz, F. G. K. (2023). Augmented intelligence in programming learning: Examining student views on the use of ChatGPT for programming learning. *Computers in Human Behavior: Artificial Humans*, 1(2), 100005. https://doi.org/10.1016/j.chbah.2023.100005