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The Use of Artificial Intelligence to Augment Scientific and Technical Writing among Computer Science Students at the University of Tabuk

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Abstract
The connection between the field of computer and artificial intelligence has emerged as a potential new tool for enhancing students' writing performance at the University of Tabuk. The goal of this research was to investigate the use of artificial intelligence to augment scientific and technical writing among computer science students at the University of Tabuk. Thirty-five students aged nineteen to twenty years old participated in this study. This research employed quantitative research design. A survey questionnaire with 11 questions was designed to assess the university students' perceptions of artificial intelligence use in learning. The study illustrated that students with a positive attitude toward artificial intelligence performed better, improved their language skills, and enhanced their learning. The study also established that artificial intelligence use among students increases academic writing. This research contributes significantly to understanding of how artificial intelligence impacts the scientific and technical writing proficiency of computer science students. Although artificial intelligence shows great potential, it should be seen as an additional tool that enhances rather than replaces the crucial function of human educators. In results indicate that, chatbot was demonstrated to significantly improve the writing skills of computer science students at the University of Tabuk through the use of artificial intelligence, including chatbots.

Keywords: Artificial Intelligence, computer science, scientific and technical writing, writing proficiency, chatbots, Human educators.

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Introduction

The connection between the field of computer and artificial intelligence (AI) have improved in recent years of information and technology. Despite the progress of AI systems, this improvement affects higher education (Marchante, 2022; Oravec, 2019; Su et al., 20019; Yun & Park, 2023). Improving computer science students' technical and scientific writing abilities is one area where this relationship shows significant potential. Using AI to support scientific and technical writing is a crucial step in educating the workforce of the future for the needs of a continually developing digital world in the present day of fast innovation. The Many studies have found that the field of computer is essential, since the students showed flexibility and ability to use AI in computer field. Further, technical and academic writing are the main forms of the higher education (Salvagno et al., 2023). Hence, learners should have the ability to lead their writing during classroom activities. So, AI is useful tool for them to improve their writing. Also, using AI for IT students can increase students' ability in writing, research and their academic pursuits (Fitria, 2023).

The aim of using AI in education is not only a trend, it is essential way to learn a new technics in improving students' ability (Gellai, 2022; Memarian & Doleck, 2023; Wang & Zhan, 2021). Furthermore, in the field of computer as a discipline, is uniquely positioned to benefit from AI's capabilities, given its inherent affinity for technology and innovation. Using AI to augment scientific and technical writing among IT students represents a natural development, allowing students not only to become proficient in their field but also to take their insights and findings effectively to a larger audience (Kandlhofer et al., 2016).

The main objective of this study is to determine how AI can refine the scientific and technical writing skills of University of Tabuk computer science students. To succeed, students should have good grades and communicate effectively. Better use of AI tools would refine their learning and comprehension, especially at the university level. Focusing on AI's role in supporting writing, this study aims to advance educational practice and research on AI-enhanced learning.

While there has been progress in this area, students frequently struggle to write in a clear, concise, and rigorous academic manner. The gap between understanding technical content and producing effective communication indicates a clear need for support. AI may provide a means to fulfill this need. Still, there is very little research into the relationship between AI and the specific training of scientific and technical writing among computer science students. Bridging the gap helps prepare students for the demands of an increasingly technical world.

In a world where data-driven decision-making and technical inventiveness have become increasingly essential, IT students are at the centre of achievements (Bates, 2011; Kumar & Raman, 2022). Students need to prepare for college with both technical proficiency and the ability to clearly convey their results and different perspectives. AI provides an appealing alternative because of its strengths in data analysis and dealing with natural languages (Casazza & Gioppo, 2020; Fitria, 2023; Gayed et al., 2022; Salvagno et al., 2023). This study explore the use of artificial Intelligence (AI) to augment scientific and technical writing among computer science students at the University of Tabuk**,** shedding light on how they can connect AI's possible to become proficient correspondents and leaders in their field.

Related Work

In the last few years, accredited institutions have begun to use Artificial Intelligence (AI) to enhance multiple components of the educational process, including IT students' ability to write technical and scientific research articles. These studies showed the important of AI mixing in academic writing within the higher education context, focusing on its influence, challenges, and potential.

Su et al. (2019) conducted an exploratory study to check the reliability of AI. The findings demonstrated that a positive effect of AI in students' writing. Additionally, he believed that AI could help students increase the readability and clarity of their written assignments. Students can write proficiently if they use tools to assess many parts of the draft such as the coherence of written content, word choice and sentence structure. Wang (2022) asserted that using AI to improve writing can help students express themselves more clearly, particularly in technical and scientific writing, where accuracy and lucidity are critical.

Ennadir and Habiballah (2025) claimed that experts versus AI-assisted assessment through ChatGPT, using a cohort of 30 students from the Faculty of Letters and Humanities at Dhar El Mahraz, University Sidi Mohamed Ben Abdellah, in Fez, Morocco. Their study assessed an English as a Foreign Language (EFL) assignment and found that the AI tool reliably produced higher evaluation scores than its human counterparts, with exceptionally substantial variation in the French language department and less distinction and statistical drift in the psychology department. This study emphasizes the potential of AI to assist with the evaluation process and to efficiently manage the assessment of written work.

Heydarnejad (2025) conducted a quantitative study with 30 high school students to explore the impact of AI-supported self-evaluation on writing. The researcher used a quasi-experimental pretest-posttest design. This study also used various instruments to collect data. The first instruments were the Cognitive Emotion Regulation Questionnaire, the Self-Competence Scale, the Academic Motivation Scale, and the Standard Writing Assessment. The results indicated a significant difference in AI tool use among high school students. In this study, the research showed that high school students were motivated after training on AI tools.

Sivabalan and Ali (2022) conducted a study on how students in higher education use WhatsApp to boost their language skills. The teachers and learners addressed all the vocabulary by providing pronunciation, discussing expressions, sharing definitions, and completing WhatsApp lexical exercises. Everyone took a chance in the performance and gave their feedback. The findings showed that WhatsApp had a significant influence on acquiring new words and on improving learners' learning achievement. WhatsApp has numerous potential uses that warrant more examination. This study builds on earlier studies by applying a bot-driven environment on Facebook to explore both word retention and learners' arrangement patterns with automated feedback.

Gayed et al. (2022) stated that students may detect and correct punctuation, grammar, and sentence structure mistakes with the use of AI-powered grammar and style checkers, which offer immediate corrections on their writing. In addition to improving the level of their writing, immediate feedback helps them to become better self-editors. Through regular use of AI-powered writing assistants, students develop a deeper understanding of language conventions, leading to more polished, error-free writing.

Vo and Huynh (2025) conducted a qualitative study of Vietnamese EFL teachers working as full-time staff at Tra Vinh University in Vietnam. The results showed that there is a

significant amount of AI in their teaching. It helps them improve their teaching techniques. Applying the method of conceptual metaphor analysis, the authors were able to uncover some shades and nuances in perspectives. To teachers, for example, AI was both a helpful tool and "two-edged sword," as they embraced its advantages while expressing worries over whether it would lead them to housework, its precision problem, whether it would fit pedagogically with their own needs, and what kind of impact on teacher identity this new force might have. Moreover, this research enhances to the body of knowledge on AI in education by proposing traditionally and contextually situated notions derived from a Vietnamese tertiary EFL context, focusing on the influence of institutional factors, professional development, and teacher preparedness.

To summarize, the relevance of AI in increasing the abilities of learners to write may not be minimized. AI improves the readability of content and offers students with immediate feedback, assisting them in becoming proficient writers. The important of practical written communication ability in high education, so these advancements benefit students both academically and professionally.

Methods

A quantitative design was used in this investigation. To test theories or provide answers to research problems, the quantitative research strategy makes use of statistical analysis and numerical data (Creswell, 2018). It requires collecting quantitative data using methods such as surveys, questionnaires, experiments, or observations to identify correlations, links, or interactions among variables. A variety of statistical techniques are then used to examine and interpret the data. This study aims to explore how University of Tabuk computer science students can improve their scientific and technical writing using artificial intelligence (AI).

Participants

The study sample consisted of 350 students at the IT College of the University of Tabuk (N=350); convenience sampling was used to select participants. The sample consisted of thirty-five (n=35) male students who were recruited from the University of Tabuk in Saudi Arabia. The students studied English as a second language after learning Arabic as their mother tongue and first language. All participants were second-year students, aged 19 to 20. This age group was selected based on previous research trends that primarily focus on the medical field. This was done to fulfil the study's goal of expanding the research to additional learning stages.

Research Instruments

A questionnaire was used to collect data, as the aim of the study was to explore the use of AI to improve scientific and technical writing among computer science students at the University of Tabuk.

Questionnaire

The students' observations and opinions on the employment of AI technology in academic and technical writing were thoroughly analyzed using an 11-item structured questionnaire. The questionnaire's goal was to analyze the level of AI use, its impact on writing quality, and any issues that may occur.

Research Procedures

Students were asked to complete the questionnaire to determine their experience and perceptions of using AI to improve scientific and technical writing. Hence, the purpose of this questionnaire was to investigate the use of AI to enhance scientific and technical writing among computer science students at the University of Tabuk.

Results

A questionnaire was examined to address the research purpose, which was to apply artificial intelligence (AI) to improve scientific and technical writing among computer science students at Tabuk University. A five-point Likert scale ranging from strongly disagree to strongly agree was utilized. This questionnaire consists of 11 items. The first three questions were the perceptions on students' experience in AI, questions from four to seven were the use of AI education context in general, and the last five questions were perceptions on the impact of AI on students' learning in the future. The following tables will discuss the results of 11 items:

Table 1. *The perceptions on students' experience in AI*

No.	Items	SA	A	No	D	SA	Mean	SD
1	I am able to improve my study grades with the chatbots I use.	16	15	2	2	0	1.71	.825
2	Compared to me, chatbots give superior results.	18	15	2	0	0	1.54	.610
3	Chatbots are used responsibly by my teacher(s) or university.	13	11	9	1	1	2.02	1.014

Students were asked to score the first statement in Table 1, "I am able to improve my study grades with the chatbots I use," on a scale with higher values denoting more agreement with the statement. Students gave this statement a mean grade of 1.71, The standard deviation is 0.825. A vast majority of the class, or 31 out of 35 students, believed that the chatbot They enhanced their academic achievement. This high level of agreement suggests that most participants saw chatbots as useful tools for increasing academic performance. Only four students, however, disagreed with the assertion. Although the percentage of students who disagreed is very low, it nevertheless provides valuable information, as it shows that some students do not believe chatbots can help them improve their study grades.

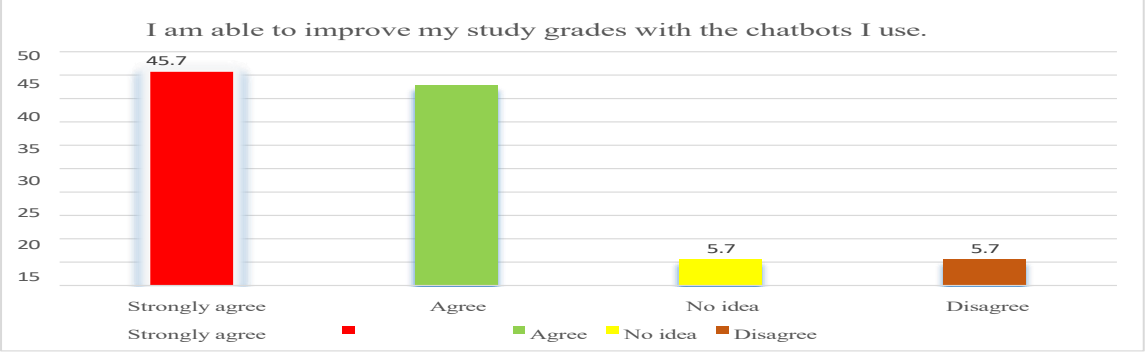


Figure 1. Answers to the first item

Figure 1 indicates the relation of four items in strongly agree, agree, no idea, and disagree. The column accounts for about 45.7% and 42.9% of the students' improvement in their use of chatbots, while 5.7% of the students disagreed with the idea of chatbots improving their grades. So, this chart confirmed the previous results by showing the percentages of the first item in Table 1. However, a significant percentage of respondents reported a positive influence, attributing better understanding and organization of their study materials to chatbots assistance.

The second item in the table is "Compared to me, chatbots give superior results." Higher ratings indicate greater student agreement with the notion that chatbots outperform humans, as measured by a scale used to score this statement. This item's mean score is 1.54, and its standard deviation is 0.610. An overwhelming majority of the student sample (33 out of 35) agreed that chatbots produce better results than they do, which may reflect a general attitude of the participants that chatbots are more useful for obtaining particular results. It is important to note that 2 students responded that they have no clear opinions or are unsure whether chatbots are better at producing results than they are. This implies that only a small percentage of students expressed uncertainty about whether chatbots are better.

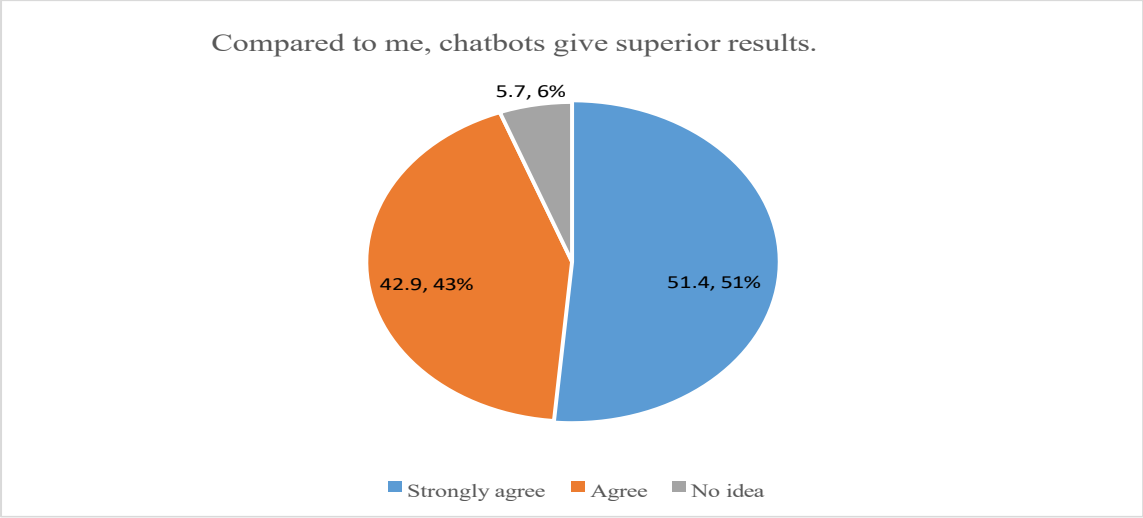


Figure 2. Answers to the second item

Figure 2 shows how students feel about the statement "Compared to me, chatbots give superior results." Most students strongly agree with this (51.4% of responses). A significant portion, 42.9%, agree but less strongly. Only a small group, 5.7%, are unsure and selected "No idea." This indicates that a majority believe chatbots are better than they are at producing results, showing a positive perception of chatbots' capabilities.

The third item in the table is "Chatbots are used responsibly by my teacher(s) or university." Higher scores indicate greater agreement with the notion that chatbots are being used responsibly, according to the scale on which students scored this statement. The mean score for this item is 2.02, and the standard deviation is 1.014. A significant percentage of students exactly 24 out of 35 thought that their professors or colleges used chatbots appropriately. This shows that a considerable proportion of participants believe the organization is handling chatbots properly. Nine students indicated they have no clear opinion or are unsure whether chatbots are used responsibly. This shows that a significant proportion of students may be concerned about the

responsible usage of chatbots. Two students disagreed with the assertion, demonstrating that some students felt their lecturers and the university are not using chatbots responsibly.

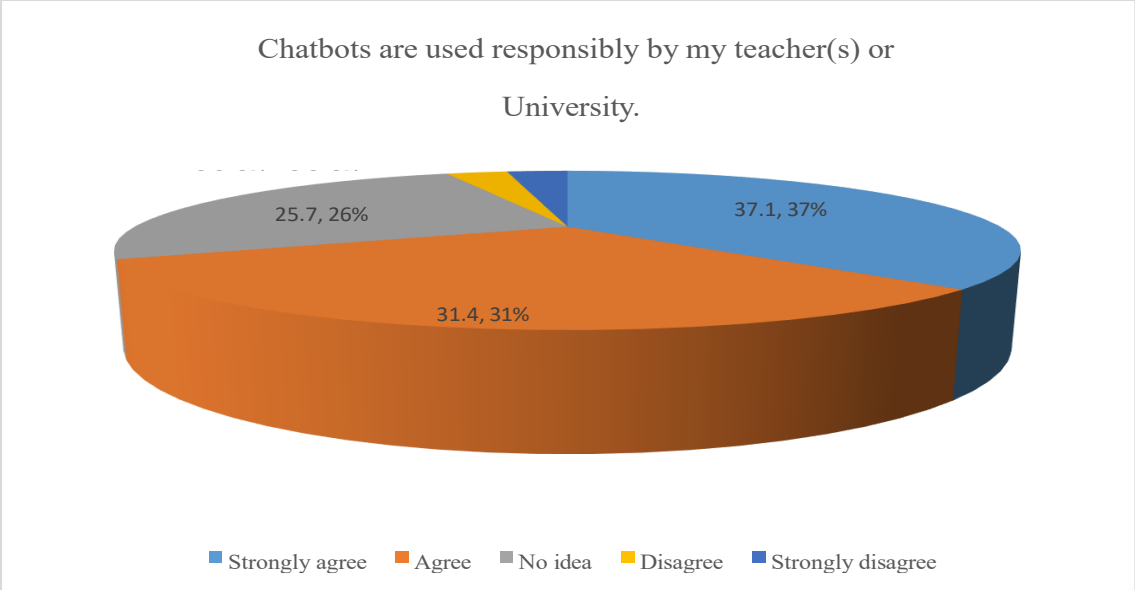


Figure 3. Answers to the third item

Figure 3 confirmed the results of item three in Table 1. The bar chart illustrates students' perceptions of the responsible use of chatbots by their teachers or university. It shows that 37% of respondents strongly agree that chatbots are used responsibly, and another 31% agree, making a majority of 68% positive. However, 26% of individuals disagree with this concept, with 3% strongly disagreeing. A small percentage (also 3%) showed uncertainty by choosing "No idea." Although the findings show that most people are positive about chatbots, a sizable percentage are still skeptical.

In conclusion, Table 1 data indicate that while students generally see chatbots as beneficial for academic growth, there are varying degrees of confidence and agreement regarding the responsible use of chatbots by their educational institutions. These results could be helpful for further study or for guiding decisions about the use of chatbots in education.

Table 2. *The use of AI in the education context in general*

No.	Items	SA	A	No	D	SA	Mean	SD
4	Chatbots usage needs to be banned in educational contexts.	10	7	5	8	5	2.74	1.462
5	I utilize chatbots to strengthen my general language skills.	17	14	1	0	3	1.80	1.132
6	Chatbots use is contrary to the goal of education.	11	10	6	1	7	2.51	1.482
7	My fellow classmates frequently employ chatbots.	10	8	12	3	2	2.40	1.168

Table 2 showed a limited number of participants agreed with "Chatbot usage needs to be banned in educational contexts." Additionally, the mean response was 2.74 (SD = 1.46). Nonetheless, 17 student participants disagreed with the statement that the use of chatbots was appropriate in postsecondary institutions as part of a disruptive innovation process. It also indicates that a significant number of the student body have anxiety or worries regarding chatbots' use in the classroom. These concerns may relate to academic integrity, ethical considerations, or potential negative impacts on traditional teaching methods.

While so Students (5 out of 35) expressed uncertainty or had no clear opinion regarding the need to ban chatbot usage. The fact that this group may not have strong ideas on the matter underscores how complex and detailed the issue is. Thirteen students disagreed with the statement, stating that they did not believe chatbots in educational settings should be regulated. This shows that many students still see the advantages of using chatbots in the classroom and do not view them as an issue or a reason for worry.

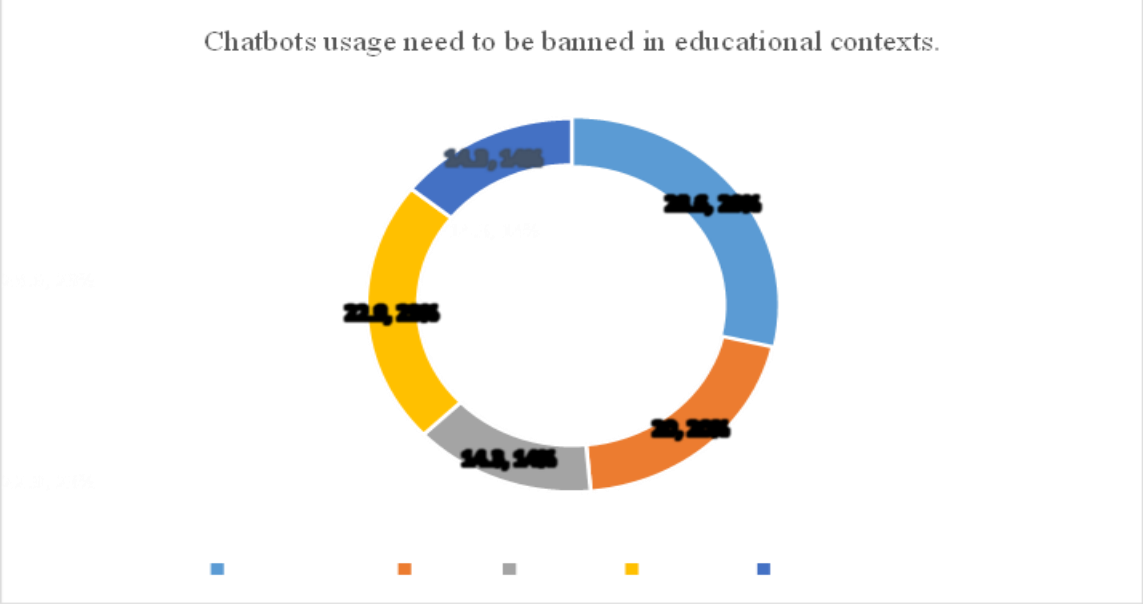


Figure 4. Answers to the fourth item

As shown in Figure 4 opinions on whether chatbots should be banned in educational settings. 29% of students strongly agree with banning chatbots, while 20% agree, meaning nearly half of students, or 49%, lean towards banning the chatbots. meanwhile, 23% disagree and 14% strongly disagree, indicating that a sizable proportion opposes banning chatbots. Furthermore, 14% are undecided, answering "No idea." Overall, there is a split opinion, with a small preference for limiting chatbots in classrooms.

The fifth subject contained within the table is “I use chatbots to help improve my general proficiency in a language. The average value is 1.80 and the standard deviation is 1.132. 31 of 35 students somewhat agreed, which suggests students are using chatbots to raise their general language proficiency. This suggests students almost completely agreed that chatbots were beneficial resources for language learning. There was one response from one of the students indicating that they were not sure what their

thoughts or opinion regarding if chatbots could help improve a students language proficiency. This response denotes that the student did not have an established opinion based around using chatbots to improve language proficiency. On the other hand, three students (3 out of 35) disagreed with the statement, expressing that they do not use chatbots for general language skill improvement. This indicates that a small minority of students in the sample do not find chatbots useful for this purpose.



Figure 5: Answers to the fifth item

Figure 5 displays student use of chatbots to improve language skills. About half of the students (48.6%) strongly agree that they use chatbots for this purpose, and 40% agree, clearly showing that 88.6% agree that chatbots can help them improve. A small percentage indicated they did not know (2.9%) or strongly disagreed with the statement (8.6%). According to these findings, the majority of participants find chatbots beneficial for improving language skills, with very little resistance.

The sixth item was 'Chatbots' use is contrary to the goal of education'. In this item, students were asked about their perspective on whether the use of chatbots contradicts the overarching goals of education. The average score of this item was 2.51, which again, is a somewhat neutral or mixed opinion when it comes to students' views about the belief that chatbots are not for educational purposes. The standard deviation of 1.482 signifies a significant amount of variability in their responses. This means that students' opinions on this matter vary widely.

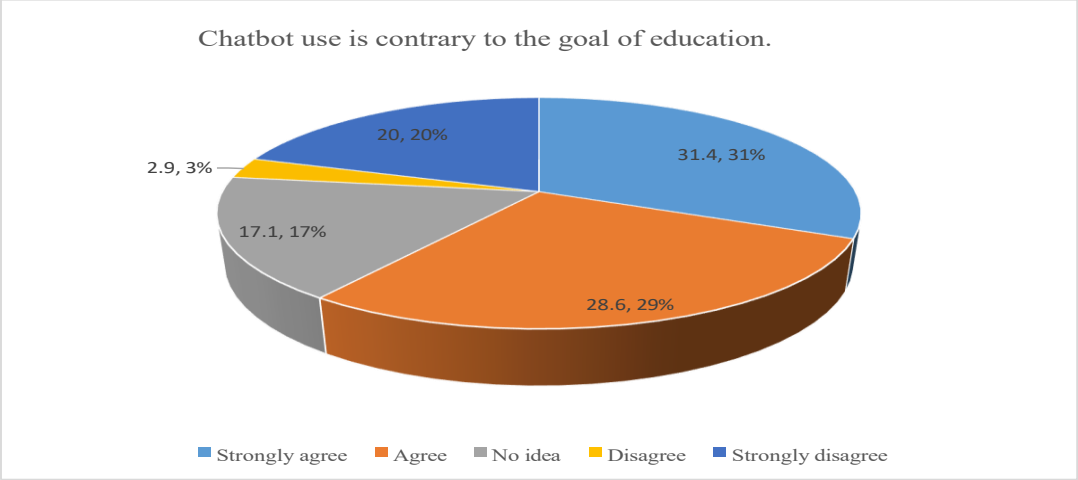


Figure 6. Answers to the sixth item

The data from Figure 6 indicate a diversity of perspectives among students regarding whether chatbot use aligns with the goals of education. A notable portion of students, 31%, strongly agreed that chatbot use is beneficial, suggesting that they do not perceive it as contrary to the goals of education, while other students 29% agree, making a significant majority of 60% seeing the usage of chatbots as applicable. These students likely see chatbots as tools that can enhance the learning experience. 17% of students reported that they had no strong opinion or convictions regarding whether the use of chatbots is incompatible with educational goals. Their answers seem to indicate that they relatively do not have a strong opinion about this issue. Similarly, 23% disagreed with the statement, indicating explicitly that they do not believe chatbots are contrary to the goals of education. These students likely view chatbots as compatible with educational objectives.

The seventh item was 'My classmates frequently employ chatbots'. In this item, students were asked about their perception of how often their classmates use chatbots. The mean is 2.40, which is in the middle of agreement and disagreement. This shows that students' perceptions of the prevalence of chatbot use among their classmates are mostly neutral or split The standard deviation of 1.168 suggests that responses are moderately dispersed. This shows that students differ in individual opinions on this matter but have a consensus around the mean.

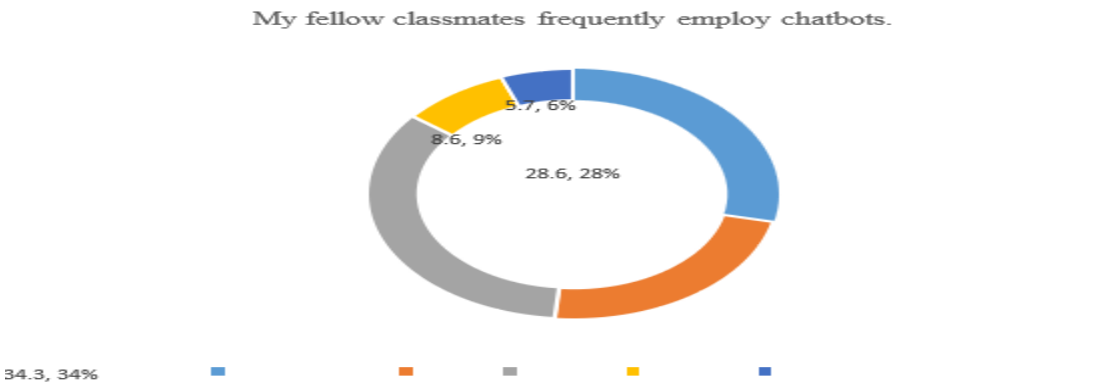


Figure 7. Answers to the seventh item

Figure 7 shows that students have varied perceptions of how often their classmates use chatbots. 28% and 23% of students agreed that their classmates frequently use chatbots. These learners may think chatbots are a prevalent technique among their peers. However, 34% of students said they were unsure about, or had a strong opinion on, how frequently their peers used chatbots. Clearly, these students lack a clear understanding of how often their peers use chatbots. However, 15% of the students strongly disagreed with the idea, stating that they don't think their peers use chatbots regularly. According to these students, chatbot usage is uncommon among their peers.

Table 2 indicates that students' views and experience with chatbots in learning contexts are complex and layered. Some students may see chatbots as helpful tools to support language development and may have concerns about using them in education, whereas other students may have a different view.

The significant variation in answers of these questions demonstrates that factors such as individual experiences, beliefs about technology in the classroom, and knowledge of peer use of chatbots can inform students' perspectives on using chatbots in classrooms.

As institutions progress in their use of technology, including the adoption of chatbots, it is critical to consider and respond to the variability of student perspectives and needs. Educators and institutions can use this information to make thoughtful decisions on how to best deploy chatbots in educational contexts to support their students and learning objectives.

Table 3. *The use of AI education context in general*

No.	Items	SA	A	No	D	SA	Mean	SD
8	As a learner, I am more effective when I use chatbots.	13	14	5	3	0	1.94	.937
9	Students' learning will be affected in the future by AI chatbots, so I'm concerned about that.	12	12	3	7	1	2.22	1.214
10	I generally have a favorable opinion about chatbots' usage in teaching.	17	13	3	2	0	1.71	.859
11	Exams and assignments can be cheated on by using chatbots.	12	13	4	2	4	2.22	1.308

As indicated in Table 3, the eighth statement was ‘As a learner, I am more effective with the use of chatbots.’ Students were asked about AI as to whether chatbots gave them more likely to experience a successful learning opportunity for this task. The median of 1.94 is less than the projected midpoint of the Likert sign scale. This indicates that students tend to agree that chatbots enhance their productivity levels. Furthermore, the standard deviation of 0.937 suggests there is a moderate level of variability in responses. While the mean leans towards agreement, the standard deviation indicates that individual responses may vary, with some students having stronger agreement or disagreement.

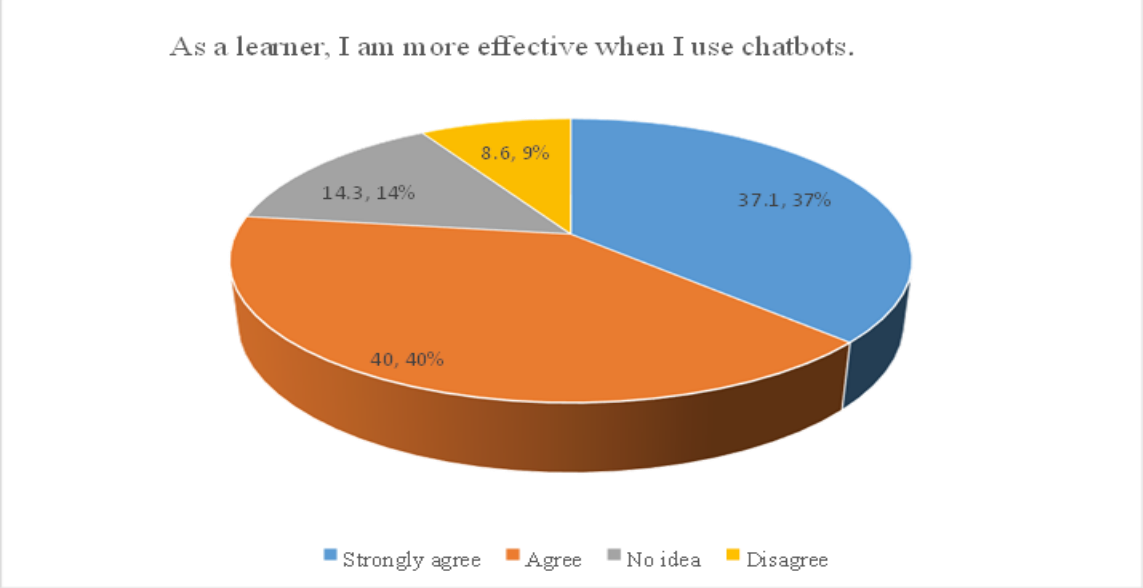


Figure 8. Answers to the eighth item

Figure 8 indicates that a majority of students (37%) strongly agree that they are more effective learners when using chatbots, while another 40% agree, making a significant majority (77%) see the use of chatbots as valuable. This shows that chatbots are critical tools that students believe will improve their learning process and efficacy. In contrast, 9% of the students disagreed with the idea or had an unclear view (14%), suggesting that students' perceptions of chatbot efficacy vary somewhat. The general trend, which highlights the potential advantages of including chatbots in the learning process, is towards agreement.

The ninth item in the table is "Students' learning will be affected in the future by AI chatbots, so I'm concerned about that. Students were questioned about their worries.

Regarding the potential effects of AI chatbots on their learning in this task. 2.22 is the mean score, which lies between agreement and disagreement. This shows that, generally speaking, students are either divided in their level of concern about the potential effects of AI chatbots on their learning or have a relatively neutral view. The standard deviation of 1.214 indicates a significant level of variability in responses. This means that students' opinions on this matter vary widely.

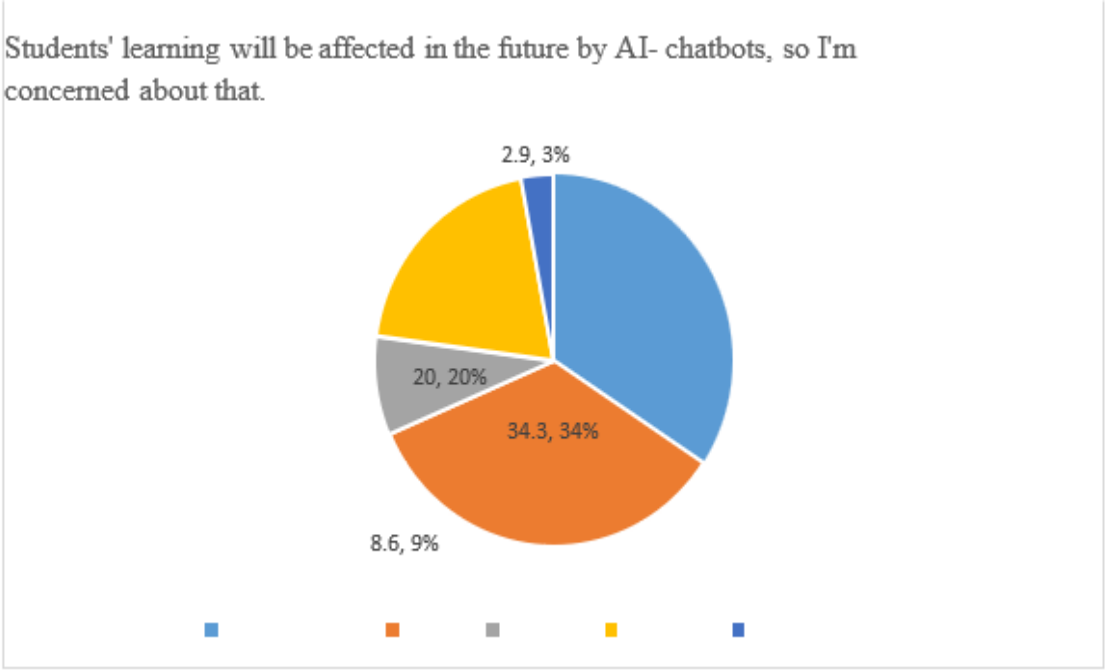


Figure 9. Answers to the ninth item

The data in Figure 9 indicate that students have varying levels of concern about how AI chatbots will affect their learning in the future. 34% of students agreed that they are worried about how AI chatbots will affect their ability to study in the future. These students probably worry or wonder how AI chatbots could affect their educational experiences. While 9% of the students indicated they had no clear opinion or idea about this concern. This suggests that these students may not have firmly established views on the matter. 20% of the students disagreed with the assertion, stating that they are not worried about how AI chatbots would affect their education in the future. These students could believe that AI chatbots could be helpful or that other factors have a greater effect.

The tenth item was 'I generally have a favorable opinion about chatbots' usage in teaching'. In this statement, students were asked what they thought generally about the application of chatbots in the classroom. The mean score is 1.71, which is less than the midpoint of the Likert scale's median of 3. This suggests that, generally, students view the use of chatbots in instruction favorably. A standard deviation of 0.859 indicates that there is moderate variability of responses. The mean is somewhat favorable, however, the standard deviation shows that individual students likely differ in how favorable they are to not favorable with some expressing a more favorable opinion and a few students having a more mixed opinion.

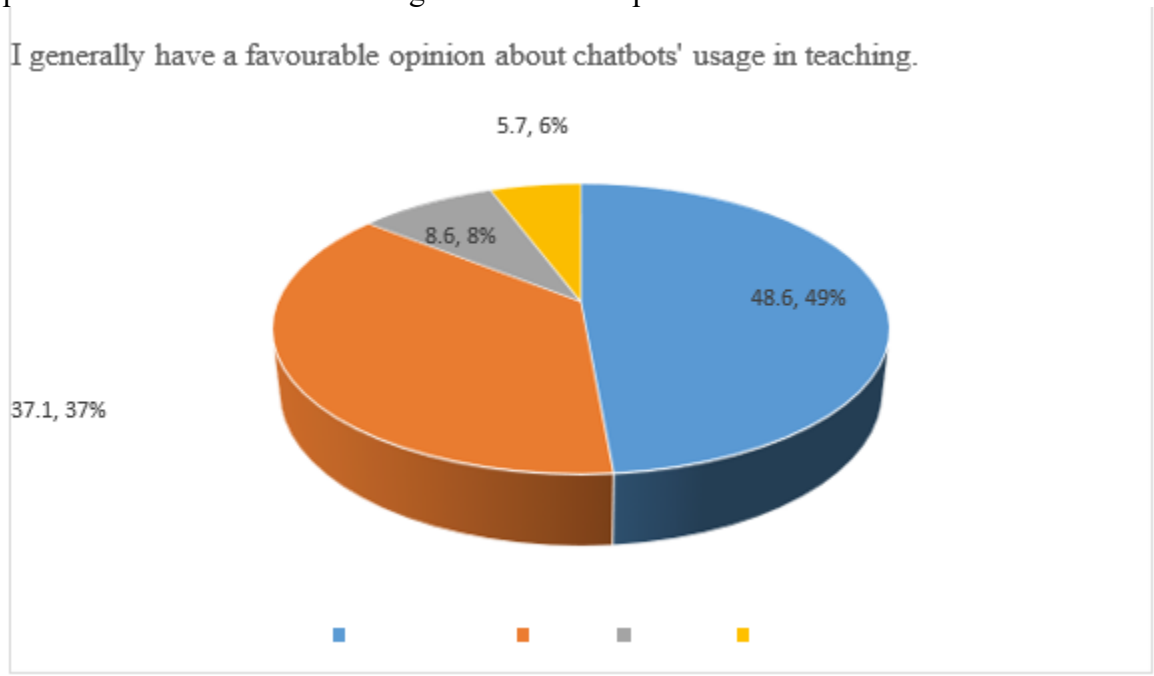


Figure 10. Answers to the tenth item

Figure 10 shows that 49% of students have a favorable opinion of the use of chatbots in teaching, while 37% agree, making a significant majority of 86% see the practice as applicable. A substantial portion of students agreed that chatbots are useful in teaching. These students likely view chatbots as beneficial tools that might improve the educational process. On the other hand, 8% of the students said they were unsure about the usage of chatbots in the classroom. This indicates that these students might not have strong opinions on the subject. However, 6% of the students disagreed with the assertion, stating that they typically do not have a favorable impression regarding the use of chatbots in the classroom. It's possible that students are worried about the use of chatbots in classroom settings.

The last item was 'Exams and assignments can be cheated by using chatbots'. Students were questioned about how they felt about the possibility of using chatbots to cheat on tests and homework in this statement. The mean score is 2.22, so it falls between agreement and disagreement. This shows that, generally speaking, students have a slightly conflicted view of the likelihood of cheating with chatbots during tests and assignments. The standard deviation of 1.308 indicates that responses are highly variable. This indicates that students' viewpoints on this issue differ widely.

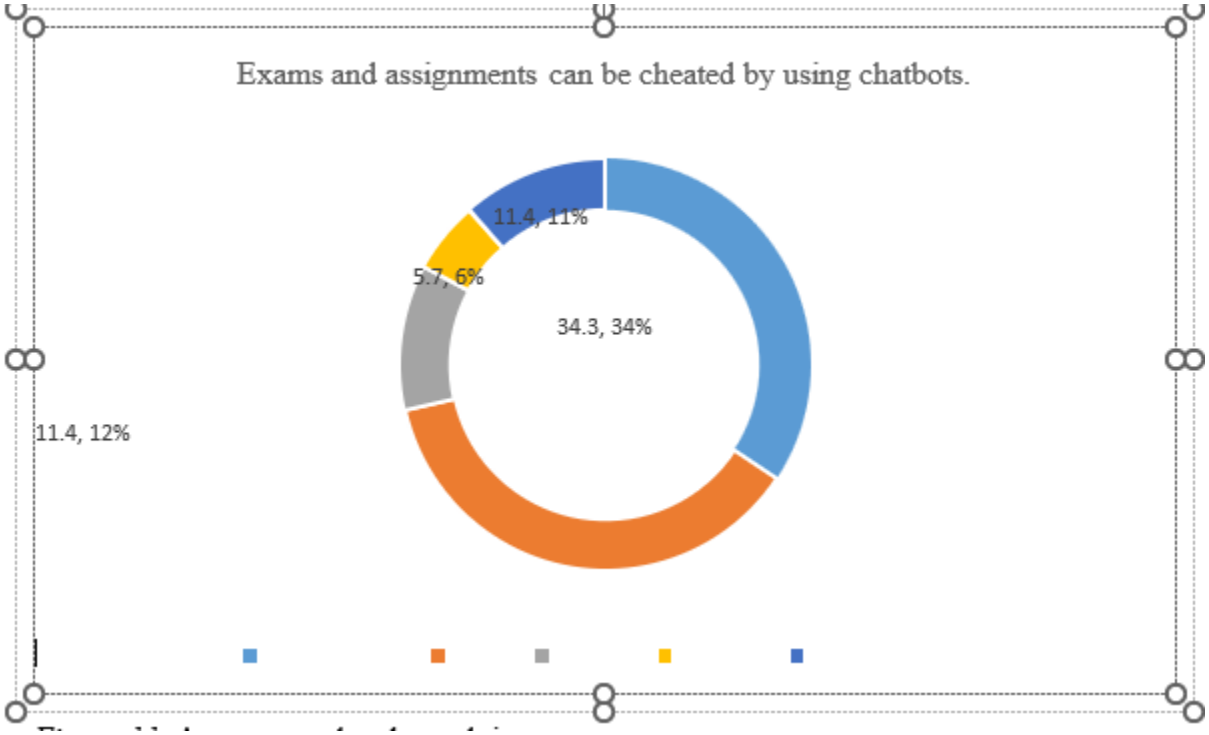


Figure 11. Answers to the eleventh item

Figure 11 shows that 34% of students strongly agree that exams and assignments can be cheated with chatbots. This indicates a discrepancy among students regarding the use of chatbots to cheat on tests and assignments. While 37% of the students agree, making a significant majority of 71% who see the chatbots as easy to use to cheat in exams and assignments. Aside from being skeptical about cheating with technology, these students have many issues with the use of technology in the first place. At the same time, 12% of the students expressed uncertainty regarding their views or feelings about this controversy. This indicates that most students are neutral on the topic. Contrastingly, 17% of the students, 6% of them have expressed disagreement with the statement and feel that cheating by using chatbots in examinations and assignments is not very common. Such students might consider chatbots to be non-threatening resources for cheating in studies.

In conclusion, the findings in Table 1.3 clearly indicate that it is necessary to consider the different dimensions of student perceptions when designing and implementing chatbots in educational settings. It indicates a general consensus on the usefulness of chatbots, but also raises concerns and divergent views. The effective incorporation of chatbots must consider these concerns, sympathetic views, and responsibilities to ensure the quality of the educational experience.

Discussion

The goal of this research is to examine the use of AI to develop academic and technical writing among IT students at the University of Tabuk, with significant findings. Further, the findings indicated that students strongly agreed on the benefits of AI, especially chatbots, for developing students' academic and technical writing

In addition, the findings during the research indicated many advantages of AI in this field students' feedback on AI's effectiveness in supporting their academic and technical writing, with high agreement. So, students' learning and perceptions were highly appreciative of the AI tool, especially chatbots, as being creative.

In this research, students learn not only the process of AI in the classroom, but also appreciate it as an aid to academic and technical writing. This appreciation indicates that using AI could be suitable for individual students' IT needs and help them improve other skills, such as communication and writing.

Furthermore, this result is consistent with earlier research by Gayed et al. (2022), Su et al. (2019), and Kumar & Raman (2022), which constitutes an essential contribution to university students who use AI in learning and technical writing. Further, this research aligns with previous research on AI, especially chatbots. These applications have demonstrated a helpful process for academic and technical writing in the classroom. Su et al. Su et al. (2019) claimed that instructors and scientists need to be trained and supported in using AI during their classroom practice. It means that teaching how to use AI could help them teach writing in a new way.

However, these results do not align with those of Yang et al. (2019). In this work, the authors stressed teachers' classical obligation to students as they progress through their studies and argued that teachers are primarily responsible for their students' education. Their findings show how sophisticated education methods can be, particularly with AI. Although this study has brought into focus the good work AI, and chatbots in particular, have done for students' scientific and technical writing, Yang et al.'s results show the constant value of human mentoring and instruction in learning.

In light of these results, the differences in findings may suggest that discussions and research on the use of AI in higher education are still ongoing. AI has the potential to replace or complement student advice and support. Further, it summarizes that more studies are needed to examine the importance of AI in higher education and its connections with traditional teaching methods.

Conclusion

In conclusion, the findings in this research lighted on the significant impact of AI, particularly chatbots, on the development of academic and technical writing among IT students at the University of Tabuk. AI is a useful tool to augment students' writing abilities in these specific domains, according to the majority of favorable student comments. This study consist with previous researches by Gayed et al. (2022), Su et al. (2019), and Kumar & Raman (2022), which demonstrates how AI may improve education by providing students with specific support and perceptive evaluation.

Nearly any academic environment may be suitable for achieving these intended results. Yang et al. (2019) research illustrates the current discussion about the potential uses of AI in higher education compared it with previous research. AI ought to be regarded as an aid for students and researchers, not a substitute, but it would certainly improve student achievement. Future educational efforts should continue to balance the scales of AI-based support versus teacher-mentorship accordingly.

AI can be perceived as support for students and researchers as opposed to replacement, though it certainly will facilitate new levels of student achievement. In summary, this study may help improve understanding the role of AI in education and its implications for technical and academic writing. For educational organizations to be able to meet the very diverse needs of today's learners in a rapidly changing world, they must show their adaptability, innovative nature and readiness.

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