

EVALUATING STUDENTS' DEPENDENCE ON CHATGPT FOR INTERACTIVE, ENGAGING, AND PRODUCTIVE LEARNING: A BASIS FOR ENHANCEMENT

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ABSTRACT

This study evaluated the level dependence of Perpetual Help College of Manila Radiologic Technology students on ChatGPT as a tool for interactive, engaging, and productive learning. The researchers conducted a survey with 94 students from 1st year to 3rd year Chatgpt levels as a sample to collect data on their demographic profiles including frequency of usage, purpose of usage, and its impact on independent learning. This study also assessed the effects of Chatgpt, dependence on interactive, engaging, and productive learning. The results showed that while there was increased efficiency and engagement with ChatGPT, there was an imminent danger of over-reliance on it which may inhibit the development of adequate critical thinking skills and independent learning abilities. Given these findings, the researchers designed an enhancement program aimed at promoting balanced utilization of Chatgpt and skills development. The objective of the program was to apply AI responsibly while underscoring the need for traditional learning, thus advocating for a balanced approach between technology and human learning.

Keywords: ChatGPT Artificial Intelligence (AI) in Education, Radiologic Technology Students, Educational, Technology, Interactive Learning, Student Engagement, Productive Learning, AI Dependence, Critical Thinking, Independent Learning, Quantitative Research, AI-Assisted Learning, Balanced Learning Approach, Technology, Integration in Education, Survey-Based Study.

1. INTRODUCTION

Technology has become a necessity in the age of technology, with artificial intelligence (AI) revolutionizing most sectors, including education. In the past decade, AI has brought in adaptive learning systems and virtual learning assistants, revolutionized the way students learned, interacted with instructors, and communicated with classmates. AI technologies such as chatbots and smart tutoring systems have opened up education and tailored it, enhancing the learning process.

AI is defined as computers or machines doing something similar to human thought and action. AI advancements have significantly influenced education by changing pedagogy and organizational operations. AI devices, like ChatGPT, may have improved learning effectiveness, but their use also raised challenges, such as worries about students' problem-solving capacity and critical thinking. ChatGPT, developed by OpenAI, surpassed a million users in its first week available in November 2022. It is designed to produce contextually relevant answers and could aid in a range of tasks such as creating outlines, poetry, and resumes.

Some teachers are concerned that it will encourage cheating. Others anticipated the ability to create improved writing and thinking. The Chatgpt controversy mirrors previous concerns regarding calculators and search engines, which ultimately enhanced educational practices. Whether the effects of ChatGPT on students were positive or negative hinges on its implementation in schools. This study sought to determine how students utilize ChatGPT to improve their learning outcomes without over-reliance on the tool.

The impact of Chatgpt on students' depended Chatgpt on its use in school. The research aims to promote educational approaches promoting autonomy, critical thinking, and self-directed learning and proposes interventions such as AI-Assisted Learning Modules and protocols for teacher-student AI interaction.

2. METHODOLOGY

This study employed a quantitative design to explore students' reliance on Chatgpt for interactive, engaging, and productive learning. Quantitative research, according to Busetto et al. (2020), centers on measurement and quantification of phenomena using numerical information. This research design allowed the researchers to gather frequency, range, and patterns of Chatgpt utilization among learners.

Although the study employed a quantitative method mainly, the authors recognized the utility of qualitative research, as emphasized by Tenny et al. (2022). Qualitative research investigates real-world issues based on participants' experiences and views, offering more in-depth insights into the quantitative results. The researchers recognized that integrating both methods provide a richer understanding of the intricate relationship between Chatgpt usage and student learning.

The study used a three-stage survey questionnaire to collect information on students' demographic characteristics, their ChatGPT dependence level, and the implications of the dependence on their learning experience. The survey instrument was tested by subject matter experts to establish its validity and reliability. Subsequently, the survey findings were subjected to pattern identification, conclusion development, and recommending action plans for increasing students' use of ChatGPT while addressing the negative implications.

Table 1. Frequency and Percentage Distribution of Respondents' Age

Age	Frequency	Percentage
30 and above	2	2.13
26-30	4	4.26
21-25	29	30.85
Total	9.4	100

Table 1 shows that The majority of respondents (62.77%) are aged 16-20, with 59 (62.77%) being primary users of ChatGPT. This aligns with the trend of younger generations adopting AI-

powered learning tools. A study by Babu et. Al (2024) found 72% of respondents aged 21-25, and 27.7% aged 16-20, indicating higher adoption rates among younger individuals. This suggests a broader trend of digital adoption among youth.

Table 2. Frequency and Percentage Distribution of Respondents' Age

Sex	Frequency	Percentage
Male	32	34.04
Female	62	65.96
Weighted Mean	94	100

Table 2 shows that Out of 94 respondents, 32 (34.04%) are male and 62 (65.96%) are female, indicating a gender disparity in technology use. Females are more likely to use technology in educational settings, possibly due to their increased openness to digital learning resources. Santiago et. Al's 2023 study supports these findings, indicating that gender influences the adoption and use of digital tools like ChatGPT.

Table 3. Frequency and Percentage Distribution of Respondents' Year Level

Year Level	Frequency	Percentage
1st	33	35.11
2nd	40	42.55
3rd	31	22.34
Total	94	100

Table 3 shows that The study reveals that second-year students make up the largest portion of respondents (42.55%), followed by first-year (35.11%) and third-year (22.34%). This distribution is likely due to the varying population sizes of each year level. The Millennium Cohort Study suggests that sociodemographic factors, such as educational attainment and age, influence survey response rates over time. Second-year students may be more engaged due to their academic and social integration. Other studies suggest that 2nd-year respondents may have characteristics that make them more likely to participate in surveys, such as being more settled in their academic environment.

Table 4. Respondents' Level of Agreement on the Frequency of Usage of ChatGPT

A.Frequency Usage	Mean	Standard Deviation	Rank	Verbal Interpretation
1. I rarely use Chatgpt for daily academic purpose	3.22	0.99	2	Average (Somewhat Agree)
2. I sometimes on Chatgpt to clarify difficult concepts in my coursework	3.56	0.97	1	High (Agree)
3. I often use Chatgpt as my primary source for research and assignments	3.06	1.07	3	Average (Somewhat Agree)
4. I usually depend on Chatgpt more than textbooks or class discussions for learning	2.84	1.11	5	Average (Somewhat Agree)
5. I frequently use Chatgpt to complete my assignments instead of doing independent research	3.00	1.08	4	Average (Somewhat Agree)
Weighted Mean	3.14	1.04		Average (Somewhat Agree)

Table 4 shows that The study reveals that while ChatGPT is often used to clarify complex concepts, students still prefer traditional learning methods. The Knowledge Academy found that 32% of university students use ChatGPT a few times a week, while a Pew Research Center survey found that teenage usage of ChatGPT for homework assistance increased from 13% in 2023 to 26% in 2024.

Table 5: Respondents' Level of Agreement on the Purpose of Usage of ChatGPT

B. Purpose of Usage	Mean	SD	Rank	VI
1. I use ChatGPT to generate explanations for topics I do not understand.	3.80	0.99	1	High (Agree)
2. I seek ChatGPT's assistance in writing and editing academic papers.	3.23	1.03	3	Average (Somewhat Agree)

3. I use ChatGPT to summarize lengthy	3.49	1.10	2	Average (Somewhat Agree)
4. I rely on ChatGPT to generate answers for quizzes or exams.	2.65	1.16	5	Average (Somewhat Agree)
5. I regularly check facts and information from	3.12	1.21	4	Average (Somewhat Agree)
Weighted Mean	3.26	1.0		Average (Somewhat Agree)

Table 5 shows that The study reveals that students use ChatGPT for self-creating explanations for topics they don't understand, with a mean score of 3.80. It also enhances learning outcomes by fostering practical engagement. However, students have moderate reliance on ChatGPT for quizzes or exams, occasionally using it for assessment while still valuing their own knowledge. ChatGPT also assists scholars and learners in writing literature reviews, analysis papers, and answering quizzes and assignments.

Table 6: Respondents' Level of Agreement on the Impact of Usage of ChatGPT on Independent Learning

C. Impact on Independent Learning	Mean	SD	Rank	VI
1. Using ChatGPT has reduced my need to critically analyze topics on my own.	3.16	1.01	1	Average (Somewhat Agree)
2. I feel less inclined to verify information from other sources after using ChatGPT.	2.87	1.00	4	Average (Somewhat Agree)
3. ChatGPT has improved my ability to think critically and independently.	3.10	1.01	2	Average (Somewhat Agree)
4. I had trouble adapting to more independent and self-managed learning styles.	2.86	1.02	5	Average (Somewhat Agree)
5. I tend to rely on ChatGPT for quick answers rather than analyzing and solving problems myself.	2.99	1.02	3	Average (Somewhat Agree)
Weighted Mean	3.00	1.01		Average (Somewhat Agree)

Table 6 shows that the Participants agreed that ChatGPT influences independent learning, but noted less time for analysis and quick responses. However, it improved critical thinking, highlighting concerns about AI's impact on education and information literacy. However, they cautioned that AI tools may lead to reliance on instructor-generated corrections.

Table 7: Respondents' Level of Agreement on the Effects of Dependence on ChatGPT to Interactive Learning

A. Interactive Learning	Mean	SD	Rank	VI
1. ChatGPT makes my learning experience more interactive by providing instant feedback.	3.37	0.95	2	Average (Somewhat Agree)
2. I participate more in discussions with classmates and teachers because of ChatGPT.	2.72	1.04	4	Average (Somewhat Agree)
3. ChatGPT enhances my understanding by allowing me to explore different perspectives.	3.43	0.99	1	High (Agree)
4. I feel that ChatGPT replaces the need for classroom interaction.	2.45	1.10	5	Low (Disagree)
5. ChatGPT enhances my ability to learn independently by helping me find relevant study materials.	3.16	1.10	3	Average (Somewhat Agree)
Weighted Mean	3.03	1.04		Average (Somewhat Agree)

Table 7 shows that The study reveals that while ChatGPT enhances interactive learning by providing instant feedback, it doesn't replace classroom interaction and collaboration. It emphasizes the need for integrating AI tools while maintaining a balance between technology and traditional learning methods.

Table 8: Respondents' Level of Agreement on the Effects of Dependence on ChatGPT to Engaging Learning

B. Engaging Learning	Mean	SD	Rank	VI
1. ChatGPT makes studying more enjoyable and engaging	2.93	1.02	3	Average (Somewhat Agree)

2. I feel more active to complete assignments with help of ChatGPT	3.33	1.06	1	Average	(Somewhat Agree)
3. I am more likely to explore new topics because of ChatGPT	3.04	1.09	2	Average	(Somewhat Agree)
4. I rely on ChatGPT to keep me engaged in learning rather than traditional methods	2.79	1.08	5	Average	(Somewhat Agree)
5. I feel more interested in studying when I use ChatGPT for explanations	2.83	1.08	4	Average	(Somewhat Agree)
Weighted Mean	2.98	1.07		Average	(Somewhat Agree)

The study shows that while ChatGPT can enhance student engagement by making studying enjoyable and promoting exploration, it still relies on traditional methods for full involvement. The mean score of 2.98 suggests that while AI tools can enhance engagement, they should be balanced with traditional approaches to maintain active learning. The highest-rated statement, "I feel more active to complete assignments with the help of ChatGPT," indicates that students often use ChatGPT to stay focused and finish academic tasks effectively. However, the lowest-rated statement, "I rely on ChatGPT to keep me engaged in learning rather than traditional methods," suggests that traditional methods still play a role in sustaining overall engagement.

Table 9: Respondents' Level of Agreement on the Effects of Dependence on ChatGPT to Productive Learning

C. Productive Learning	Mean	SD	Rank	VI
1. ChatGPT helps me complete academic tasks more efficiently.	3.47	1.05	1	High(Agree)
2. I spend less time searching for information because of ChatGPT.	3.44	1.16	2	High(Agree)
3. ChatGPT allows me to organize my study materials more effectively.	3.17	1.13	4	Average(SomewhatA gree)
4. ChatGPT makes me procrastinate less and focus more on studying .	3.04	1.15	5	Average(SomewhatA gree)
5. ChatGPT helps me become productive with instant feedback.	3.24	1.09	3	Average(SomewhatA gree)

Weighted Mean	3.27	1.12	Average(Somewhat Agree)
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Table 9 shows that The study shows that ChatGPT enhances productivity by improving efficiency and reducing information search time, but has moderate impacts on study organization, procrastination, and instant feedback. It suggests that AI tools contribute to student-centered learning and academic performance, but independent learning and critical engagement are needed for a balanced educational experience.

Table 10. Significant relationship between the demographic profile in terms of age and level of respondents' dependence on ChatGPT.

Variables	Chi-Square Value	CV	P-Value	Interpretation
Age	9.578	21.026	.653	Accept Ho
Level of Respondents' Dependence on ChatGPT				

Table 10 shows that Since the computed chi-square of 9.578 is less than the critical value of 21.026, we accept Ho. $P > 0.05$ (No Statistically Significant Relationship) There is no significant relationship between the age and the level of respondent's dependence

Table 11. Significant relationship between the demographic profile in terms of sex and level of respondents' dependence on ChatGPT.

Variables	Chi-Square Value	Critical Value	P-Value	Interpretation
Sex	2.952	9.488	.566	Accept Ho
Level of Respondents' Dependence on ChatGPT				

Table 11 shows that Since the computed chi-square of 2.952 is less than the critical value of 9.488, we accept Ho. $P > 0.05$ (No Statistically Significant Relationship) There is no significant relationship between the SEX and Level of Respondents' Dependence on ChatGPT

Table 12. Significant relationship between the demographic profile in terms of year level and level of respondents' dependence on ChatGPT.

Variables	Chi-Square Value	Critical Value	P-Value	Interpretation
Year Level				

Level of Respondents' Dependence on ChatGPT	16.771	15.507	.033	Reject Ho
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Table 12 shows that Since the computed chi-square of 16.771 is greater than the critical value of 15.507, we reject Ho. $P < 0.05$ (Statistically Significant Relationship) There is a significant relationship between the Year Level and Level of Respondents' Dependence on ChatGPT.

Table 13. Significant relationship between the demographic profile in terms of age and effects of respondents' dependence on ChatGPT.

Variables	Chi-Square Value	Critical Value	P- Value	Interpretation
Age	7.163	21.026	.847	Accept Ho
Effects of Respondents' Dependence on ChatGPT				

Table 13 shows that Since the computed chi-square of 7.163 is less than the critical value of 21.026, we accept Ho. $P > 0.05$ (No Statistically Significant Relationship) There is no significant relationship between the Age and Effects of Respondents Dependence on ChatGPT.

Table 14. Significant relationship between the demographic profile in terms of sex and effects of respondents' dependence on ChatGPT.

Variables	Chi-Square Value	Critical Value	P- Value	Interpretation
Sex	1.765	9.488	.779	Accept Ho
Effects of Respondents' Dependence on ChatGPT				

Table 14 shows that Since the computed chi-square of 1.765 is less than the critical value of 9.488, we accept Ho. $P > 0.05$ (No Statistically Significant Relationship) There is no significant relationship between the Sex and Effects of Respondents' Dependence on ChatGPT.

Table 15. Significant relationship between the demographic profile in terms of year level and effects of respondents' dependence on ChatGPT.

Variables	Chi-Square Value	Critical Value	P- Value	Interpretation

Year Level	11.392	15.507	.180	Accept Ho
Effects of Respondents' Dependence on ChatGPT				

Table 15 shows that Since the computed chi-square of 11.392 is less than the critical value of 15.507, we accept Ho. $P > 0.05$ (No Statistically Significant Relationship) There is no significant relationship between the Year Level and Effects of Respondents' Dependence on ChatGPT.

Table 16. Significant relationship between the demographic profile and effects of respondents dependence on ChatGPT

Variables	Chi-Square Value	Critical Value	P- Value	Interpretation
Demographic Profile	10.692	15.507	.220	Accept Ho
Effects of Respondents' Dependence on ChatGPT				

Table 16 shows that The study found no significant relationship between demographic profile and respondents' dependence on ChatGPT, suggesting that students from different backgrounds use the tool at varying levels. However, personal study habits and academic workload may have a greater impact on their reliance. This finding supports previous research highlighting differences in attitudes and expectations across regions and the impact of sociodemographic factors on students' acceptance and use of AI technologies in educational settings.

Table 17. Significant relationship between the demographic profile and effects of respondents dependence

Variables	Chi-Square Value	Critical Value	P- Value	Interpretation
Demographic profile	7.900	15.507	.220	Accept Ho
Effects of Respondents' Dependence on ChatGPT				

Table 17 shows that Since the computed chi-square of 7.900 is less than the critical value of 15.507, we accept H_0 . $P > 0.05$ (No Statistically Significant Relationship). There is no significant relationship between the Demographic Profile and Effects of Respondents' Dependence on ChatGPT.

Table 18. Significant relationship between demographic profile and effects of respondents dependence

Variables	Chi-Square Value	Critical Value	P- Value	Interpretation
Demographic profile	322.466	26.296	.000	Reject H_0
Effects of Respondents' Dependence on ChatGPT				

Table 18 shows that The study found a significant relationship between respondents' dependence on ChatGPT and its effects on their learning experiences. It suggests a need for a balanced approach in integrating ChatGPT into education, ensuring students continue to develop essential academic skills. The study also highlights the importance of understanding how reliance on ChatGPT influences interactive learning, engagement, and productivity to determine if increased usage leads to positive academic outcomes or potential negative outcomes.

3. RESULTS AND DISCUSSION

Q1. Demographic profile of the respondents in terms of:

1.1 Age

The respondents' demographic study reveals fundamental characteristics like age, sex, and year level that are necessary for comprehending developments regarding ChatGPT reliance. According to statistical analysis from 94 respondents, the majority (62.77%) are between the ages of 16 and 20, with 30.85% falling into the 21–25 age range. Only 2.13% are 30 years of age or older, and a smaller fraction (4.26%) are between the ages of 26 and 30.

These findings show that younger people, especially those between the ages of 16 and 20, are ChatGPT's main users, which is consistent with general patterns in younger generations' use of artificial intelligence (AI).

1.2 Sex

As gleaned from the table out of 94 respondents, 32 are male and 62 are female, showing that most respondents are female. This gender difference may influence how male and female

students use technology like ChatGPT. Females tend to be more open to using technology for learning.

1.3 Year Level

It shows that second-year students make up the largest portion of respondents (42.55%), followed by first-year (35.11%) and third-year (22.34%). This distribution reflects the actual population distribution across different year levels, with second-year students having the highest representation due to their larger overall student population.

Q2. Level of the respondents' dependence on ChatGPT in terms of:

2.1 Frequency of Usage

It shows that respondents somewhat agree on how often they use ChatGPT, with an average score of 3.14 and a standard deviation of 1.04. This indicates that higher educational institutions should integrate Artificial Intelligence tools. They should also promote independent research and critical thinking in learning.

The highest-rated statement is that I sometimes rely on ChatGPT to clarify difficult concepts. My coursework has a mean score of 3.56, indicating a high level of agreement (Agree) indicating that the students frequently turn to ChatGPT for explanations. However, they rely on ChatGPT less than textbooks for class discussions, scoring 2.84, which means they somewhat agree and still value traditional learning methods.

2.2 Purpose of Usage

The highest-rated statement is that I use ChatGPT to generate explanations for topics I do not understand and has a mean score of 3.80 with verbal interpretation of (Agree). Students appreciate how ChatGPT assists them in creating their own explanations. Shloul et al. (2024) noted that ChatGPT improves learning outcomes by encouraging practical engagement through supportive tools.

However, the lowest-rated statement I rely on ChatGPT to generate answers for quizzes or exams has a mean score of 2.65 with verbal interpretation of (average) level of agreement (Somewhat Agree). This suggests they rely on ChatGPT only moderately, using it occasionally for assessments while still appreciating their own knowledge.

2.3 Impact on Independent Learning

The average response from participants indicated that they somewhat agree that ChatGPT influences independent learning. The participants felt that it saves time on analyzing important topics, with an average score of 3.16. They also preferred quick responses, scoring 2.99. However, they believed it improved critical thinking, with a score of 3.10. This aligns with concerns raised by Mohebbi (2024) about the effects of AI in education, particularly regarding information literacy and verification issues.

Q3. Level of respondents' dependence on ChatGPT based on the following:

3.1 Interactive Learning

It shows how respondents feel about depending on ChatGPT for interactive learning. The average score is 3.03, with a difference of 1.04, indicating that they somewhat agree. This means that while ChatGPT helps with interactive learning by giving quick feedback and allowing

exploration of various viewpoints, it does not substitute for classroom interactions and working together with other students.

The highest-rated statement, "ChatGPT enhances my understanding by allowing me to explore different perspectives," received a mean score of 3.43, indicating a high level of agreement (Agree). This shows they often use it to boost their knowledge, supporting previous findings that AI tools encourage personalized learning and critical thinking. While the lowest-rated statement, "I feel that ChatGPT replaces the need for classroom interaction," scored 2.45, reflecting low agreement (Disagree).

3.2 Engaging

The highest-rated statement, "I feel more active to complete assignments with the help of ChatGPT," received a mean score of 3.33, indicating an average level of agreement (Somewhat Agree). This suggests that students often use ChatGPT to stay focused and finish academic tasks effectively (Iqbal et al., 2024). While the lowest-rated statement, "I rely on ChatGPT to keep me engaged in learning rather than traditional methods," scored 2.79, reflecting an average level of agreement (Somewhat Agree). The overall mean score of 2.98 with a standard deviation of 1.07 is interpreted as somewhat agree.

3.3 Productive Learning

It shows how students feel about ChatGPT's effects on productive learning. The average score is 3.27, which means they somewhat agree that ChatGPT improves productivity, especially by making tasks faster and easier to find information. However, it has a moderate effect on helping with study organization, cutting down procrastination, and giving quick feedback. These results indicate that while AI tools support student learning and academic success, it is important to encourage independent learning and critical thinking for a well-rounded education.

Q4. Significant relationship between the demographic profile of the respondents and their level of dependence on ChatGPT

Age

Since the computed chi-square of 9.578 is less than the critical value of 21.026, we accept H_0 .

$P > 0.05$ (No Statistically Significant Relationship)

There is no significant relationship between the age and the level of respondent's dependence

Sex

Since the computed chi-square of 2.952 is less than the critical value of 9.488, we accept H_0 .

$P > 0.05$ (No Statistically Significant Relationship)

There is no significant relationship between the sex and level of respondents dependence

Year Level

Since the computed chi-square of 16.771 is greater than the critical value of 15.507, we reject H_0 .

$P < 0.05$ (Statistically Significant Relationship)

There is a significant relationship between the year level and level of respondents dependence

Q5. Significant relationship between the demographic profile of the respondents and the effects to their learning experiences

Age

Since the computed chi-square of 7.163 is less than the critical value of 21.026, we accept Ho.

$P > 0.05$ (No Statistically Significant Relationship)

There is no significant relationship between the age and effects of respondents' dependence on ChatGPT.

Sex

Since the computed chi-square of 1.765 is less than the critical value of 9.488, we accept Ho.

$P > 0.05$ (No Statistically Significant Relationship)

There is no significant relationship between the sex and effects of respondents on ChatGPT.

Year Level

Since the computed chi-square of 11.392 is less than the critical value of 15.507, we accept Ho.

$P > 0.05$ (No Statistically Significant Relationship)

There is no significant relationship between the year level and effects of respondents' dependence on ChatGPT.

Q6. Significant relationship between the level of the respondents' dependence on ChatGPT and the effects to their learning experiences

Since the computed chi-square of 322.466 is greater than the critical value of 26.296, we reject Ho.

$P < 0.05$ (Statistically Significant Relationship)

There is a significant relationship between the level of respondents dependence and effects of respondents dependence on ChatGPT.

4. CONCLUSION

From the findings of the study, the researchers were able to achieve this conclusion: Through a well-structured enhancement program, Radiologic Technology students can maximize the benefits of ChatGPT for interactive, engaging, and productive learning while minimizing the risks of over-dependence. This program can guide students in maintaining a balance between using AI tools and improving critical thinking, problem-solving, and independent learning skills.

5. RECOMMENDATIONS

1.) Radiologic Technology students must be encouraged to use ChatGPT carefully, making sure it is used as an option rather than as their main learning resource. In order to improve interactive, captivating and effective learning while encouraging critical thinking and independent study abilities, they had to be instructed on how to use AI properly.

- 2.) Educators and Professors should incorporate AI literacy initiatives to help students understand ChatGPT's benefits and disadvantages, offering ethical application instructions to minimize dependency while optimizing learning benefits.
- 3.) School administrators must implement AI integration methods to enhance learning without compromising essential academic tasks, and periodically evaluate the academic impact of ChatGPT
- 4.) AI developers and educational technology providers could enhance AI models by incorporating elements that encourage students to critically evaluate answers and work more deeply.
- 5.) Parents and guardians should be educated about ChatGPT's role in education, allowing them to assist students in balancing traditional study methods with AI-assisted learning.
- 6.) Future researchers should explore the long-term impact of AI tools on students' academic achievement, cognitive growth, and learning habits, as well as their independent learning.

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REFERENCES

- Ball-Rokeach, S. J. (1998). A theory of media power and a theory of media use: Different stories, questions, and ways of thinking. *Mass Communication and Society*. Retrieved from <https://www.scirp.org/reference/referencespapers?referenceid=2981608>
- Deng, X., & Lin, Y. (2022). *ChatGPT: A large language model for natural-sounding conversation*.
- Duggal, N. (2024). *Future of AI (Artificial Intelligence): What lies ahead?* Simplilearn. <https://www.simplilearn.com/future-of-artificial-intelligence-article>
- Greene-Harper, R. (2023) *The pros and cons of using AI in learning: Is ChatGPT helping or hindering learning outcomes?* eLearning Industry. <https://elearningindustry.com/pros-and-cons-of-using-ai-in-learningchatgpt-helping-or-hindering-learning-outcomes>
- Hong, F., Dou, W., & Chen, S. (2022) Research on the impact of artificial intelligence on government public service quality. In *Proceedings of the 2022 International Conference on Public Management and Intelligent Society (PMIS 2022)*. <https://www.atlantispress.com/proceedings/pmis-22/125977532>
- Jung, J. Y. (2017) Media dependency theory. In P. Rössler (Ed.), *The international encyclopedia of media effects*. <https://onlinelibrary.wiley.com/doi/abs/10.1002/9781118783764.wbieme0063>
- Kasneci, E., Sessler, K., Gasser, U., et al. (2023) ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274. <https://www.sciencedirect.com/science/article/abs/pii/S1041608023000195>
- Kim, Y. C. (2020) *Media System Dependency Theory*. https://www.researchgate.net/publication/345737612_Media_System_Dependency_Theory
- Mollman, S. (2022). ChatGPT attracts over one million users within a week of launch. Reuters. <https://www.reuters.com/technology/chatgpt-sets-record-fastest-growing-user-base-analyst-note-2023-02-01/>
- OpenAI. (n.d.). *ChatGPT versions and features*. <https://openai.com>
- Shloul, T. A., Mazhar, T., Abbas, Q., Iqbal, M., Ghadi, Y. Y., Shahzad, T., Mallek, F., & Hamam, H. (2024) Role of activity-based learning and ChatGPT on students' performance in education. *Computers and Education: Artificial Intelligence*, 6, 100219.
- Susnjak, T. (2023) ChatGPT: The end of online exam integrity? *Education Sciences*, 13(1), 14. <https://www.mdpi.com/2227-7102/14/6/656>
- Wartman, S. A., & Combs, C. D. (2018) Medical education must move from the information age to the age of artificial intelligence. *Academic Medicine*. <https://pubmed.ncbi.nlm.nih.gov/29095704/>
- Xu, Z. (2023) AI in education: Enhancing learning experiences and student outcomes. *Journal of Educational Technology Development and Exchange*, 16(1), 45–58.

https://www.researchgate.net/publication/379259445_AI_in_education_Enhancing_learning_experiences_and_student_outc

Zhai, X. (2023) ChatGPT for education: A review of AI-generated content in language learning. *Education and Information Technologies*, 28, 7669–7697.
https://www.researchgate.net/publication/369127881_ChatGPT_for_Education_and_Research_A_Review_of_Benefits_and_Risks

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