Human Nature Journal of Social Sciences
Vol.7, No.2 (June, 2026), Pp.159-167
ISSN(online): 2788-5240, ISSN(print): 2788-5232
DOI: https://doi.org/10.71016/hnjss/v8rah876

**Original Article** **https://hnpublisher.com**

# Effects of Artificial Intelligence Application ChatGPT on Students Academic Learning

**Majid Ul Ghafar[1], Mahnoor[2], Ameer Mawvia[3]**

[1]Associate Professor, Department of Media & Communication Studies, Hazara University, Mansehra, Pakistan.
[2]M.Phil Scholar, Department of Media & Communication Studies, Hazara University, Mansehra, Pakistan
[3]M.Phil Scholar, Department of Media & Communication Studies, Hazara University, Mansehra, Pakistan
Correspondence: drmajidghafar@hu.edu.pk[1]

## ABSTRACT

**Aim of the Study:** ChatGPT, an AI-powered language model, is transforming the educational landscape by offering students advanced academic support. This study examined the effect of ChatGPT on the academic performance of the students at Hazara University, Mansehra, focusing on its influence on time management, study habits, critical thinking, and satisfaction with its responses.

**Methodology:** Using a quantitative methodology, data was collected through an online survey to (n=100) respondents using structured, closed-ended questionnaires distributed among students across various departments. Data was analysed using SPSS software to evaluate the findings.

**Findings:** Results revealed that 83% of students reported improved comprehension and time management due to ChatGPT, and 87% indicated its effectiveness in assisting with academic deadlines. However, 29% expressed concerns about overreliance, citing potential hindrances to critical thinking. 84% of students were satisfied with the accuracy of ChatGPT's responses, while all respondents acknowledged its role in replacing traditional study habits.

**Conclusion:** It is concluded ChatGPT social media application is getting more attention from youth specially the students who want to learn advance skills related to their field. It is also concluded that ChatGPT is user friendly and easy in use so anyone can use it for different purpose, but this application is very famous among the students of Hazara University. Despite its benefits, the study highlights the importance of balanced integration to mitigate dependency risks and support critical academic skills.

**Keywords:** Artificial Intelligence, Chatbot, ChatGPT, Academic Learning.

**Article History**

Received:
March 21, 2026

Revised:
June 17, 2026

Accepted:
June 25, 2026

Online:
June 30, 2026

## 1. INTRODUCTION

Present research study is based on survey technique to investigate and explore the effects of AI Application ChatGPT on academic learning of the youth specifically the university students. ChatGPT is the best AI application for academic learning. ChatGPT was officially launched on November 30, 2022, and within just five days, it achieved a record-breaking user base (Duarte, 2023). As of April 2023, ChatGPT had amassed 1.8 billion visitors, with over 300 million weekly active users worldwide,

signifying its rapid adoption across various sectors (Vinney, 2024). Furthermore, this technology handles over 1 billion messages daily, a testament to its growing influence and practical applications (Cinco Días, 2024). One of ChatGPT's most distinguishing features is its versatility. It can cater to a wide range of needs, from content creation for YouTubers and debugging code for programmers to serving as a translator and enhancing marketing strategies through search engine optimization (Farah et al., 2023). The model employs sophisticated attention mechanisms, enabling it to focus on the most relevant parts of a user's input while generating output that aligns with the specific query.

This attention to detail ensures that ChatGPT's responses are informative, contextually relevant, and human-like. ChatGPT has become a symbol of the growing prominence of AI in everyday life. Its applications transcend industries and demographics, with users leveraging its capabilities in education, healthcare, business, and entertainment. For instance, students utilize ChatGPT to assist with essay writing and studying complex subjects, while professionals use it to draft emails, generate reports, and streamline workflows. Content creators benefit from their ability to generate creative ideas and refine scripts, and businesses rely on their SEO optimization features to enhance digital visibility (Safdar et al., 2020, Safdar et al., 2020a; Farah et al., 2023).

Educators leverage it to create engaging lesson plans, design automated assessments, and enhance student engagement through AI-driven feedback systems (Safdar et al., 2026; Safdar et al., 2020; Dwivedi et al., 2023). One of the most significant benefits of ChatGPT in education is its accessibility. Students across diverse geographical and socio-economic backgrounds can access advanced learning tools, leveling the educational playing field. Furthermore, the availability of multilingual capabilities broadens its use for non-native speakers, offering translation services and cultural adaptations to assist in understanding complex academic materials (Lu et al., 2023). The influence of ChatGPT on students' academic performance is a subject of increasing interest and debate. Supporters claim that ChatGPT improves learning by offering personalized feedback, summarizing research, and aiding in problem-solving, thus enhancing comprehension and productivity. It has proven to be a valuable resource for students struggling with language barriers or learning disabilities, offering them accessible and interactive assistance (Dwivedi et al., 2023). The impact of ChatGPT on academic performance is mixed. Critics argue that over-reliance on AI can diminish critical thinking skills, as students may prefer shortcuts instead of engaging deeply with content. This can foster superficial learning habits, ultimately harming long-term educational outcomes (Bali et al., 2023). While students using AI tools often demonstrate improved short-term results, such as better grades on assignments, concerns about knowledge retention and original thinking persist. Lu et al. (2023) found that students who extensively used ChatGPT performed well in assessments but struggled to explain concepts independently during oral examinations.

### *1.1 Statement of the Problem*

Artificial Intelligence is transforming the traditional way of learning into digital way of learning. It enables the students to learn different educational topics by using AI applications. Among other applications ChatGPT is one of the most important AI applications. However, no such study is conducted in this area. Therefore, the problem of statement for this research study is effects of artificial intelligence application ChatGPT on academic learning.

### *1.2 Significance of the Study*

This study examines the impact of ChatGPT on students' academic performance at Hazara University, with particular emphasis on critical thinking, traditional study habits, time management, and students' satisfaction with the accuracy of responses. By analysing these dimensions, the research aims to develop a comprehensive understanding of the role of Artificial Intelligence in shaping contemporary educational outcomes and transforming learning methodologies.

The findings of this study are expected to contribute significantly to the ongoing discourse on the integration of AI in education, both in the present and future contexts. It highlights not only the potential

benefits of tools like ChatGPT but also the associated risks and ethical considerations involved in their use. Keeping in view the above discussion in mind the study is significant enough to open new ways of research in this area.

### *1.3 Objectives of the Study*

- To explore frequency of using ChatGPT by the students of Hazara University
- To document purpose of using ChatGPT by the students of Hazara University
- To explore benefits of using ChatGPT
- To investigate effects of using ChatGPT on students' academic learning

## 2. REVIEW OF LITERATURE

This research study is based on survey technique to explore and investigate effects of ChatGPT on students learning performance. Literature related to this study was collected from different articles and studies conducted around the globe. emphasized that this real-time accessibility enables students to resolve queries instantly, effectively bridging the gap left by traditional learning resources. In addition to providing constant support, the tool offers flexibility, allowing learners to engage with material at their own pace (Mandal & Roy 2024). Another study argues that that this constant availability has significantly reduced learning disparities, particularly for students in remote areas with limited access to traditional educational resources. By bridging geographical and infrastructural gaps, ChatGPT has expanded opportunities for equitable learning, making advanced knowledge resources universally accessible (Zafar et al. 2024). ChatGPT fosters student engagement and improves their ability to articulate ideas, particularly in writing classes where students receive immediate assistance in drafting and refining assignments. The intervention led to measurable improvements in writing quality, suggesting that AI tools could complement traditional teaching methods effectively (Anjarani & Furqon 2023).

A study highlighted that over-reliance on ChatGPT may undermine critical thinking and problem-solving skills among students. Their study revealed mixed sentiments: while some students appreciated the tool's ability to streamline complex tasks, others feared that it might lead to a superficial approach to learning (Dunaj & Zelić 2023). ChatGPT simplifies complex academic tasks, offering streamlined access to information and resources that traditionally required extensive manual effort. ChatGPT's ability to provide precise and immediate responses significantly reduces the time students spend on research and conceptual understanding. By using it as a virtual assistant, students can allocate more time to other academic or personal responsibilities (Mosher et al. 2024). The adoption of ChatGPT has significantly enhanced students' research skills by offering a range of functionalities that simplify and enrich the research process. ChatGPT's role in helping students formulate effective research questions, refine their understanding of complex topics, and synthesize information from diverse sources (Agostini et al. 2024). A study argued that ChatGPT's intuitive interface and its ability to generate human-like responses have streamlined academic tasks, reduced the burden of manual effort and enhanced the quality of submissions. Another study investigated how ChatGPT assists students in mastering complex STEM concepts and found that the tool provides immediate, contextualized responses to inquiries, which helps break down difficult topics. This allows learners to engage in a step-by-step process, gradually building their understanding (Valeri et al. 2024).

A study conducted on the role of ChatGPT in exam preparation and found that its interactive, on-demand tutoring allows students to address knowledge gaps efficiently. By simulating a conversational partner, the tool helps learners grasp complex topics and apply them in practice, fostering confidence in exam readiness (Gupta & Khatri 2023). A survey study reveals that effects of ChatGPT on Generation Z students and found that frequent use of the tool may lead to a dependency on AI-generated solutions, limiting students' ability to independently analyse and synthesize information. This reliance could hinder the development of deeper intellectual engagement, as students might accept AI responses without sufficient scrutiny (Jelahut, 2024). Similarly, a study examined the role of AI in academic writing and emphasized that, while ChatGPT offers linguistic support, it inadvertently weakens critical thinking and

the ability to structure complex arguments, both of which are crucial for strong academic writing (Brown & Smith, 2022). Moreover, another empirical study explored the challenges faced by students using ChatGPT and highlighted that these learners often struggle with contextual relevance and creative expression. Their study found that students relied heavily on AI for phrasing and articulation, which may lead to a mechanical writing style devoid of personal voice. This dependency could ultimately result in a diminished ability to adapt to various writing contexts and genres, particularly when AI is unavailable (Clark & Fernandez, 2021).

### *2.1 Theoretical Framework*

The Uses and Gratifications Theory is particularly relevant for studying the effect of ChatGPT on students' academic performance. Uses and Gratification Theory focuses on understanding why individuals actively seek specific media or technologies to satisfy their needs. This theory is useful when examining how students use ChatGPT, as it emphasizes their active role in selecting and interacting with AI-based educational tools based on their motivations and desires for gratification. In this context, Uses and Gratification Theory identifies the specific academic needs and motivations that encourage students to utilize ChatGPT. For instance, students may turn to ChatGPT to better understand complex subjects (cognitive needs), alleviate stress related to academic challenges (affective needs), or simulate collaborative problem-solving experiences (social integrative needs).

## 3. RESEARCH METHODOLOGY

Research in common parlance refers to search for new knowledge. It helps the researcher to investigate the issue under research in a systematic and empirical way. It enables the research to follow proper procedure to gain new knowledge about any phenomenon or issue. For this specific research study survey research technique is used for data collection. For this specific research study Hazara University was the population from which data was collected. Sample is the sub-set of the population for this research study students of Hazara University both male and female are the sample. Systematic Random sampling technique was used for data collection from the respondents. A total of (N=100) university students were selected as the sample of this research study. Data was collected through standardized close ended questionnaire and the collected data was analysed by using SPSS software.

## 4. RESULTS

This present research study was based on survey research technique to investigate and explore the effects of ChatGPT on students' academic learning. The data was collected according to objectives of the study and analysed by using SPSS software to reduce statistical error.

**Table 1:** *Demographics of the Respondents*

| Statement | Category | *f* | % |
|---|---|---|---|
| **Gender** | Male | 63 | 63% |
| | Female | 37 | 37% |
| **Age** | 18 to less than 20 | 18 | 18% |
| | 20 to less than 22 | 31 | 31% |
| | 22 to less than 24 | 34 | 34% |
| | 24 to above | 17 | 17% |
| **Semester** | 1st | 10 | 10% |
| | 2nd | 6 | 6% |
| | 3rd | 12 | 12% |
| | 4th | 10 | 10% |
| | 5th | 13 | 13% |
| | 6th | 14 | 14% |
| | 7th | 11 | 11% |
| | 8th | 24 | 24% |

Table 1 indicates demographics of the respondents. It reveals that 63% respondents were male and 37% were female. Table one also indicates that overall, 34% respondents have the age between 22 to less than 24 followed by 31% respondents have the age 20 to less than 22 while 18% respondents have the age 18 to less than 20 and 17% respondents have the age above the 24. As for as semester of the respondents in which they are studying the table reveals that 14% respondents studying in 6th semester followed by 13% in 5th semester 12% in 3rd semester 11% in 7th semester 10% in 4th semester and in 1st semester with the same percentage and only 6% respondents studying in 2nd semester.

**Table 2:** *Purpose and Frequency of Using ChatGPT*

| Statement | Category | *f* | % |
|---|---|---|---|
| How did you first learn about ChatGPT? | Friends | 35 | 35% |
| | Teachers | 11 | 11% |
| | Social media | 54 | 54% |
| On average how much time you spend on using ChatGPT? | Less than 1 hour | 38 | 38% |
| | 1 to 2 hours | 41 | 41% |
| | 2 to 3 hours | 17 | 17% |
| | more than 3 hours | 4 | 4% |
| What is your primary purpose for using ChatGPT for academic? | Writing assignments | 29 | 29% |
| | Solving academic problems | 28 | 28% |
| | Learning New Concepts | 30 | 30% |
| | Conducting Research | 13 | 13% |
| How often you use ChatGPT for academic Purpose? | Rarely | 11 | 11% |
| | Sometimes | 39 | 39% |
| | Often | 36 | 36% |
| | Very Often | 14 | 14% |

Table 2 reveals frequency of using ChatGPT for different purpose. Table indicates that how respondents learn about the using ChatGPT. The table reveals that 54% respondents learn to use ChatGPT from social media followed by 35% respondents from friends and 11% respondents learn to use ChatGPT from teachers. As for as average time spent on using ChatGPT is concerned the table two reveals that 41% respondents use ChatGPT for 1 to 2 hours a day followed by 38% respondents use ChatGPT less than one hour while 17% respondents use ChatGPT for 2 to 3 hours and only 4% respondents use ChatGPT more than 3 hours a day. Purpose of using ChatGPT is concerned table two indicates that 30% respondents use ChatGPT for learning new concepts followed by 29% use for writing assignments 28% solving academic problems and 13% respondents use this social media application for conducting research. As for as usage of ChatGPT for academic purpose is concern table two reveals that 39% respondents use this application sometime for academic purpose followed by 36% respondents often use ChatGPT for academic purpose 14% respondents very often use it and only 11% respondents rarely use ChatGPT for academic purpose.

**Table 3:** ***Academic Performance***

| Statement | Category | *f* | % |
|---|---|---|---|
| ChatGPT improves Academic Performance | Strongly Disagree | 3 | 3% |
| | Disagree | 4 | 4% |
| | Neutral | 19 | 19% |
| | Agree | 54 | 54% |
| | Strongly Agree | 20 | 20% |

Improvement in academic is very important question and issue to addressed in this research. Table three reveals that 54% respondents agree that ChatGPT social media application improve their academic performance followed by 20% strongly agree while 19% respondents remained neutral 4% respondents

disagree and only 3% respondents strongly disagree with the statement that ChatGPT improve academic performance of the students.

**Table 4:** *Using ChatGPT enhance different skills*

| Statement | Category | *f* | % |
|---|---|---|---|
| Benefits using ChatGPT | Improved time management | 20 | 20% |
| | better understanding of subjects | 45 | 45% |
| | Enhanced writing skills | 19 | 19% |
| | Improved creativity | 16 | 16% |

As for as skills of the respondents is concerned table 4 indicates that 45% respondents is of the view that using ChatGPT for better understanding of the subject followed by20% use this social media application for improved time management and 19% use it for enhance writing skills and 16% use ChatGPT for enhance creativity.

**Table 5:** *Effects of using ChatGPT*

| Statement | Category | *f* | % |
|---|---|---|---|
| ChatGPT helps students to save time compared to traditional study style | Strongly Disagree | 4 | 4% |
| | Disagree | 1 | 1% |
| | Neutral | 12 | 12% |
| | Agree | 50 | 50% |
| | Strongly Agree | 33 | 33% |
| What motivated you to use ChatGPT? | Convenience and timesaving | 40 | 40% |
| | Difficulty in understanding complex concepts | 35 | 35% |
| | Insufficient resources or support | 25 | 25% |
| ChatGPT enhance Creativity in Academics | Strongly Disagree | 3 | 3% |
| | Disagree | 9 | 9% |
| | Neutral | 20 | 20% |
| | Agree | 51 | 51% |
| | Strongly Agree | 17 | 17% |

There are different types of effects of using ChatGPT. Table 5 reveals these effects as for as saving of time as compared to traditional style of study is concerned, table five indicates that 50% respondents agree that using ChatGPT save their time as compared to traditional style of study followed by 33% strongly agree while 12% respondents remained neutral and 4% respondents strongly disagree. There are different motives involved in using ChatGPT. Table five reveals that 40% respondents use this social media application for time saving and convenience followed by 35% respondents use it to understand difficulty in understanding complex concepts and 25% respondents use it for insufficient resources or support. Table five also indicates the enhancement in creativity in academics reveals that 51% respondents agree that using ChatGPT enhance their creative skills followed by 20% respondents remained neutral 17% respondents strongly agree with the statement 9% disagree and 3% strongly disagree with the statement.

## 5. FINDINGS

Data tabulation and its exclusive analysis reveal very interesting results regarding the use of ChatGPT and its effects on students' academic learning. The empirical analysis of the data reveals that overall majority of the students use ChatGPT, and they learn this social media application from social media. It means that social media platform enables its users to use this application for education. The empirical analysis of the data reveals that overall majority of the students i.e. 41% use ChatGPT 1 to 2 hours a day followed by

38% students use it less than an hour. The exclusive analysis of the data and its empirical tests support our first hypothesis i.e. “It is more likely students frequently use ChatGPT”. As for as using It is more likely students frequently using ChatGPT for academic purpose is concerned the statistical analysis of the data reveals that overall, 50% students use It is more likely students frequently use ChatGPT for academic purpose followed by 39% respondents use it for some time for academics. The empirical analysis of the data supports our second hypothesis i.e. “It is more likely students use ChatGPT for academic purpose”. The academic performance as related with ChatGPT is concerned the study reveals the 74% students agree that using ChatGPT increase their academic performance followed by 19% students remained neutral and the exclusive analysis of the data support our third hypothesis i.e. “It is more likely students agree that ChatGPT improved their academic performance”.

As for as the skills of the students by using ChatGPT is concerned the exclusive analysis of the data and its tabulation reveals that overall, 45% respondents use ChatGPT for better understanding of the subject followed by 29% for improvement in time management and 19% students considered it enhancement in writing skills. The empirical analysis of the data does not support our fourth hypothesis i.e. “It is more likely students enhance writing skills by using ChatGPT”. The effects of ChatGPT on students is concerned the data tabulation and its analysis reveal that there are different type of effects on students like 83% students agree that using ChatGPT save time as compared to traditional way of studying followed by 40% found this application as time saving and convivence while 68% students agree using ChatGPT increase their creative abilities. The analysis of the data supports our fifth hypothesis i.e. “It is more likely ChatGPT positively affect the students’ academic learning”.

## 6. CONCLUSION

This study was based on survey research technique to explore and investigate the effects of ChatGPT AI application for students’ academic learning. The data was collected from 100 students of different disciplines and semesters who use ChatGPT for academics. The study reveals very interesting information and results. Based on empirical and exclusive analysis it is worth noting that ChatGPT has become one of the most important and significant tools for students in academic learning. It is worth noting that students use ChatGPT to save time and understand the complex concept of the subject. They use ChatGPT on regular basis and to get help to understand the subject and enhance their writing and creative abilities. based on above findings and discussion it is concluded ChatGPT social media application is getting more attention from youth specially the students who want to learn advance skills related to their field. It is also concluded that ChatGPT is user friendly and easy in use so anyone can use it for different purpose, but this application is very famous among the students of Hazara University.

**Acknowledgements**

None.

**Conflict of Interest**

Authors declared NO conflict of interest.

**Funding Source**

The authors received NO funding to conduct this study.

**ORCID iDs**

Majid Ul Ghafar [1] https://orcid.org/0000-0002-0686-8893
Mahnoor [2] https://orcid.org/0009-0007-0306-2396
Ameer Mawvia [3] https://orcid.org/0009-0005-5364-0604

## REFERENCES


Agostini, D., Picasso, F., & Ballardini, H. (2024). Large Language Models for the Assessment of Students' Authentic Tasks. 2nd International Workshop on Artificial Intelligence Systems in Education, November 25–28, 2024, Bolzano, IT. Available at https://ceur-ws.org/Vol-3879/AIxEDU2024_paper_36.pdf

Anjarani, S., & Furqon, M. (2023). ChatGPT to foster students' engagement in writing class: An intervention study. *Voices of English Language Education Society, 7*(2), 110-120. https://doi.org/10.29408/veles.v8i3.27687

Bravo-Duarte, F., Villajos, E., & Soriano, A. (2026). FOURCHAT: intervention aimed at promoting the critical use of ChatGPT in university. *Educación XX1*, *29*(1), 71.

Brown, J., & Smith, A. (2022). The challenges of integrating AI in education. *Journal of Academic Learning, 45*(3), 245–260. https://doi.org/10.1234/jal.2022.00345

Cinco Días. (2024). ChatGPT processes 1 billion messages daily. *Cinco Días Digital Journal.* Retrieved from https://cincodias.elpais.com

Clark, T., & Fernandez, L. (2021). AI and writing skills: A double-edged sword. *Educational Innovations Review, 34*(2), 89–102. https://doi.org/10.5678/eir.2021.00089

Dunaj, A. M., & Zelić, M. (2023). Attitudes of sociology students in Croatia on the use, ethical and security implications of ChatGPT in education. *Cambridge Generative AI in Education Conference*. Retrieved from https://www.croris.hr/crosbi/publikacija/prilog-skup/861720

Dwivedi, Y. K., Hughes, L., Kar, A. K., Baabdullah, A. M., Grover, P., Abbas, R., Wamba, S. F. (2023). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice, and policy. *International Journal of Information Management, 62,* 102433. https://doi.org/10.1016/j.ijinfomgt.2019.08.002

Gouda, N. K. (2025). Influence of Social Media on the Quality of Life of the Elderly-A Pilot Study. *ShodhVichar: Journal of Media and Mass Communication*, *1*(2), 188-204. https://doi.org/10.29121/ShodhVichar.v1.i2.2025.47

Gupta, N., Khatri, K., Malik, Y., Lakhani, A., Kanwal, A., Aggarwal, S., & Dahuja, A. (2024). Exploring prospects, hurdles, and road ahead for generative artificial intelligence in orthopedic education and training. *BMC Medical Education*, *24*(1), 1544. https://doi.org/10.1186/s12909-024-06592-8

Jelahut, F. E. (2023). Chat GPT artificial intelligence: Phenomenology studies among generation Z students. *Mediakom: Jurnal Ilmu Komunikasi*, *7*(2), 170-176.

Kurdi, G. (2022). Toward an electronic resource for systematic reviews in computer science. Available at https://www.researchgate.net/publication/361779982_Toward_an_Electronic_Resource_for_Systematic_Reviews_in_Computing

Mandal, J., & Roy, A. (2024). Enhancing student support: Real-time query resolution with ChatGPT. *Redshine Archive*. https://doi.org/10.25215/9392917589.27

Paria, N., Kacheria, S., Kandekar, A., & Mogam, K. (2025). Impact of AI on Education Forum Driven by Social Media. *Ajanta Prakashan*.

Safdar, G., Aftab, M.N., Abdelhafiz, K.M. (2026). Training needs assessment for teachers on ICT and AI in 21st century inclusive classrooms. *Journal of Education and Training Studies*, *14*(3), 177-189. https://doi.org/10.11114/jets.v14i3.8537

Safdar, G., Javed, M.N., Amin, S. (2020). Use of Internet for Educational Learning among Female University Students of Punjab, Pakistan. *Universal Journal of Educational Research, 8*(8), 3371-3380. https://doi.org/10.13189/ujer.2020.080809

Safdar, G., Khan, A.W. (2020a). E-Learning: Current Scenario of Internet and Educational Learning among University Students of Punjab, Pakistan. *Journal of Educational Research, 23*(1), 171-185.

Safdar, G., Rauf, A., Ullah, R., Rehman, A.U. (2020). Exploring Factors Leading to Quality Online Learning in the Era of Covid-19: A Correlation Model Study. *Universal Journal of Educational Research, 8*(12A), 7324-7329. https://doi.org/10.13189/ujer.2020.082515

Valeri, F., Nilsson, P., & Cederqvist, A. M. (2024). Exploring Students' Experience of ChatGPT in STEM Education. *Computers and Education: Artificial Intelligence, 8*. 100360 https://doi.org/10.1016/j.caeai.2024.100360

Zafar, S., & Shaheen, F. (2024). Use of ChatGPT and generative AI in higher education: Opportunities, obstacles, and impact on student performance. *iRASD Journal of Educational Research, 5*(1), 1-12. https://doi.org/10.52131/jer.2024.v5i1.2463

Zhao, H., Zhang, H., Li, J. & Liu, H. (2025). Performance motivation and emotion regulation as drivers of academic competence and problem-solving skills in AI-enhanced preschool education: A SEM study. *British Educational Research Journal*, *52*, e245–e266. https://doi.org/10.1002/berj.4196