CHATGPT

AS A SUPPORT TOOL IN UNIVERSITY LEARNING: OPPORTUNITIES AND CHALLENGES

REVISTA UGC | Revista científica de la Universidad del Golfo de California
Volumen 4 | S1 | Febrero - 2026

CHATGPT COMO HERRAMIENTA DE APOYO EN EL APRENDIZAJE UNIVERSITARIO: OPORTUNIDADES Y DESAFÍOS

Esmaeil Sadri-Damirchi[1]
E-mail: e.sadri@uma.ac.ir
ORCID: https://orcid.org/0000-0003-0568-052X
[1] University of Mohaghegh Ardabili. Iran.

Suggested Citation (APA, 7th edition)

Sadri-Damirchi, E. (2026). ChatGPT as a support tool in university learning: opportunities and challenges. Revista UGC, 4(S1), 6-11. *Revista UGC, 4(S1), 37-43.*

Submission: 11/17/2025 **Acceptance:** 01/04/2026 **Publication:** 02/01/2026

ABSTRACT

The integration of generative artificial intelligence in higher education has led to significant transformations in teaching and learning processes, generating new opportunities and challenges for universities. In this context, ChatGPT has emerged as a support tool with high pedagogical potential, due to its ability to generate natural language, provide immediate feedback, and assist in various academic activities. This article aims to analyze the use of ChatGPT as a support tool in university learning, identifying its main opportunities and challenges from a pedagogical, ethical, and institutional perspective. The research was conducted using a qualitative, descriptive-analytical approach, based on a narrative and systematic review of scientific literature published between 2023 and 2026. The findings demonstrate that ChatGPT can contribute to strengthening autonomous learning, educational personalization, the development of digital skills, and support for teaching, especially in academic writing, the comprehension of complex content, problem-solving, and online tutoring. Furthermore, its appropriate integration can foster active methodologies, formative assessment processes, self-regulated learning, and student-centered educational experiences. However, significant challenges are also identified, such as the impact on academic integrity, cognitive superficiality, technological dependence, the reliability of the information generated, and the lack of clear institutional policies to guide its use. These risks underscore the need for regulatory frameworks, pedagogical strategies, and teacher training programs that promote critical, ethical, responsible, and reflective use.

Keywords:

ChatGPT, higher education, artificial intelligence, university learning, academic integrity, pedagogical innovation.

RESUMEN

La incorporación de la inteligencia artificial generativa en la educación superior ha propiciado transformaciones relevantes en los procesos de enseñanza y aprendizaje, generando nuevas oportunidades y desafíos para las instituciones universitarias. En este contexto, ChatGPT se ha posicionado como una herramienta de apoyo con alto potencial pedagógico, debido a su capacidad para generar lenguaje natural, ofrecer retroalimentación inmediata y asistir en diversas actividades académicas. El presente artículo tiene como objetivo analizar el uso de ChatGPT como herramienta de apoyo en el aprendizaje universitario, identificando sus principales oportunidades y desafíos desde una perspectiva pedagógica, ética e institucional. La investigación se desarrolló bajo un enfoque cualitativo, de tipo descriptivo-analítico, a partir de una revisión narrativa y sistemática de literatura científica publicada entre 2023 y 2026. Los hallazgos evidencian que ChatGPT puede contribuir al fortalecimiento del aprendizaje autónomo, la personalización educativa, el desarrollo de competencias digitales y el apoyo a la labor docente, especialmente en la redacción académica, la comprensión de contenidos complejos, la resolución de problemas y la tutoría virtual. Asimismo, su integración adecuada puede favorecer metodologías activas, procesos de evaluación formativa, aprendizaje autorregulado y experiencias educativas centradas en el estudiante. No obstante, también se identifican desafíos significativos, como la afectación de la integridad académica, la superficialidad cognitiva, la dependencia tecnológica, la fiabilidad de la información generada y la ausencia de políticas institucionales claras que orienten su uso. Estos riesgos subrayan la necesidad de marcos normativos, estrategias pedagógicas y programas de formación docente que promuevan un uso crítico, ético, responsable y reflexivo.

© 2026; Los autores. Este es un artículo en acceso abierto, distribuido bajo los términos de una licencia Creative Commons que permite el uso, distribución y reproducción en cualquier medio siempre que la obra original sea correctamente citada.

Palabras clave:

ChatGPT, educación superior, inteligencia artificial, aprendizaje universitario, integridad académica, innovación pedagógica.

INTRODUCTION

The rapid evolution of digital technologies has generated profound transformations in educational systems, particularly in higher education, where technological innovation has become a key factor in responding to the demands of an increasingly interconnected and knowledge-based society. In this context, artificial intelligence (AI) has emerged as one of the tools with the greatest potential impact on teaching and learning processes, offering new possibilities for educational personalization, access to information, and the development of academic and professional skills. Among these technologies, ChatGPT stands out for its ability to generate natural language, interact conversationally, and support diverse academic activities, which has motivated a growing interest in its application in the university setting.

The incorporation of ChatGPT into higher education has opened a broad debate about its pedagogical, ethical, and institutional implications. On the one hand, this tool offers significant opportunities to improve the learning experience by facilitating the understanding of complex content, supporting academic writing, promoting self-directed learning, and providing immediate feedback. On the other hand, its use raises challenges related to academic integrity, technological dependence, the quality of learning, and the redefinition of traditional teacher and student roles. In this regard, the United Nations The Educational , Scientific and Cultural Organization (2023) has warned that the use of generative artificial intelligence systems in higher education must be approached with caution, underlining the need to establish ethical, regulatory and pedagogical frameworks that guarantee a responsible and equitable use of these technologies .

Recent scientific literature shows a sustained increase in research focused on the impact of ChatGPT on university educational processes. The systematic review conducted by Munaye et al. (2025) reveals that this tool is perceived by students and teachers as a valuable resource to support learning, especially in research tasks, problem-solving, and written production. The authors highlight that ChatGPT can contribute to strengthening student autonomy and optimizing study time. However, they also point out significant risks, such as superficial information processing, uncritical use of generated content, and a possible decrease in cognitive effort—aspects that can negatively affect the quality of university learning.

From a pedagogical perspective, the integration of ChatGPT represents a substantial transformation of traditional teaching models. Immediate access to elaborate responses and coherent texts necessitates a rethinking of teaching strategies and assessment systems, shifting the emphasis from memorization to the development of higher-order cognitive skills, such as critical thinking, argumentation, and analytical abilities. Yu (2024) argues that this transformation entails new demands on the teacher's role, requiring them to assume the functions of pedagogical mediator, ethical guide, and designer of learning experiences that integrate artificial intelligence in a reflective and contextualized manner. Within this framework, the use of ChatGPT should not replace the teacher's work, but rather complement it, strengthening educational processes from a critical and humanistic perspective.

Another relevant aspect in the analysis of ChatGPT use in higher education is the lack of clear institutional policies to guide its implementation. Alkaabi et al. (2025) point out that, in many university contexts, the adoption of this tool has occurred spontaneously, without regulatory guidelines or specific training programs for faculty and students. This lack of guidance generates uncertainty regarding the limits of its use, especially in academic assessment processes, and highlights the need to develop digital and information literacy skills related to the ethical and critical use of artificial intelligence.

From a broader perspective, the debate surrounding ChatGPT is part of a deeper reflection on the future of higher education in the age of artificial intelligence. Cáceres-Mesa (2026) argues that the integration of these technologies impacts not only pedagogical and evaluative practices, but also academic well-being, teachers' professional identity, and students' learning experience. In this sense, it is crucial to analyze the use of ChatGPT as a complex educational phenomenon, conditioned by institutional, cultural, and social factors, and not merely as an isolated technological innovation.

Therefore, addressing the use of ChatGPT as a support tool in university learning requires a balanced perspective that acknowledges both its benefits and limitations. While its potential to enrich educational processes is undeniable, its implementation without clear pedagogical criteria can undermine fundamental principles of higher education, such as intellectual autonomy, academic honesty, and the holistic development of the student. In this context, the objective of this article is to analyze the use of ChatGPT as a support tool in university learning, identifying its main opportunities and challenges from a pedagogical, ethical, and institutional perspective, in order to contribute reflections that guide its responsible integration into higher education.

METHODOLOGY

This article was developed using a qualitative, descriptive-analytical approach, based on a narrative and systematic review of scientific literature on the use of ChatGPT in higher education. This approach allowed for

a comprehensive analysis of the main opportunities, challenges, and pedagogical, ethical, and institutional implications associated with the incorporation of generative artificial intelligence into university teaching and learning processes.

The selection of sources was carried out by consulting recognized academic databases, prioritizing scientific articles, systematic reviews, empirical studies and institutional documents published between 2023 and 2026. The inclusion criteria considered thematic relevance, methodological rigor, relevance to the context of higher education and disciplinary diversity, covering areas such as pedagogy, health sciences, academic writing, information literacy and science education.

The analysis process was carried out in several stages. First, an exploratory reading of the sources was conducted to identify general trends, theoretical approaches, and main lines of research. Subsequently, an in-depth analysis was performed to extract conceptual categories related to the educational opportunities, pedagogical risks, ethical challenges, and institutional implications of ChatGPT use. Finally, an integrative synthesis was developed that allowed for contrasting perspectives, identifying points of convergence and divergence, and constructing a critical and contextualized view of the phenomenon under study.

This methodological design allowed us to address the use of ChatGPT not only as a technological innovation, but also as a complex educational phenomenon influenced by pedagogical, cultural, regulatory, and social factors. Furthermore, the methodology adopted helped to substantiate the proposed reflections and provide a useful analytical framework for future research and decision-making in higher education.

DEVELOPMENT

The integration of ChatGPT into the university context has generated a significant shift in teaching and learning dynamics by introducing new forms of interaction between students, knowledge, and technology. This generative artificial intelligence tool allows users to ask questions, receive personalized explanations, generate academic texts, and obtain support in problem-solving, making it a potentially valuable resource for strengthening self-directed learning and the understanding of complex content. According to United Nations Educational , Scientific and Cultural Organization (2023), the use of artificial intelligence systems in higher education can contribute to democratizing access to knowledge and promoting more inclusive learning experiences adapted to the individual needs of students.

In academic settings, ChatGPT has been used to support activities such as essay writing, summarizing, clarifying theoretical concepts, and online tutoring. Munaye et al. (2025) highlight that this tool can facilitate knowledge construction by providing immediate explanations and contextualized examples, thus promoting meaningful understanding and self-regulated learning. Furthermore, students report increased motivation and academic efficiency, as they can access ongoing guidance without the time constraints of traditional teaching methods.

From a pedagogical perspective, ChatGPT can also contribute to the development of digital and cognitive skills by promoting critical engagement with information and the reflective use of technological resources. Yu (2024) points out that integrating this tool into the educational process requires rethinking teaching strategies, emphasizing student-centered methodologies, active learning, and formative assessment. In this sense, ChatGPT should not be seen as a substitute for the teacher, but rather as a complement that strengthens pedagogical mediation processes and academic support.

One of the main opportunities for using ChatGPT in higher education is the personalization of learning. Unlike traditional teaching models, this tool allows explanations and content to be adapted to the individual needs, learning styles, and paces of students. According to United Nations Educational , Scientific and Cultural Organization (2023), generative artificial intelligence has the potential to reduce educational gaps by offering academic support to students with different levels of knowledge and diverse socio-educational contexts.

Another relevant opportunity is the strengthening of autonomous learning. ChatGPT provides immediate feedback, allowing students to identify errors, delve deeper into concepts, and explore topics of interest independently. Munaye et al. (2025) indicate that this feature fosters self-regulated learning, a key competency in university education, as it promotes student responsibility for their own learning process.

ChatGPT can also support teachers in planning and designing academic activities. Teachers can use this tool to generate teaching materials, design assessment questions, develop study guides, and propose innovative activities. Yu (2024) states that generative artificial intelligence can help optimize teachers' time, allowing them to focus on tasks of greater pedagogical value, such as personalized tutoring, formative assessment, and educational research.

From an institutional perspective, the integration of ChatGPT also offers opportunities to innovate in assessment systems and teaching methodologies. Cáceres-Mesa (2026) argues that artificial intelligence can drive the transformation of higher education toward more flexible, interdisciplinary models focused on student well-being, provided it is implemented within sound ethical and pedagogical frameworks.

Despite the opportunities it offers, the use of ChatGPT in higher education also presents significant challenges that

must be critically addressed. One of the main risks is the impact on academic integrity, as students may use the tool to generate academic work without proper cognitive processing. The United Nations Educational , Scientific and Cultural Organization (2023) warns that the indiscriminate use of generative artificial intelligence can encourage plagiarism practices and reduce the authenticity of learning.

Another significant challenge is cognitive superficiality. Munaye et al. (2025) point out that immediate access to elaborate answers can limit the development of critical thinking and analytical skills, especially when students use the tool uncritically. In this sense, the use of ChatGPT requires pedagogical strategies that foster reflection, information evaluation, and the active construction of knowledge.

Redefining the role of the teacher is another significant challenge. Yu (2024) highlights that the presence of ChatGPT in the university classroom compels teachers to rethink their pedagogical practices, assessment strategies, and relationships with students. This process involves developing new professional competencies related to artificial intelligence literacy, digital ethics, and pedagogical mediation in technological environments.

Furthermore, the lack of clear institutional policies represents a significant barrier to the responsible implementation of ChatGPT. Alkaabi et al. (2025) point out that many higher education institutions lack regulatory guidelines governing the use of artificial intelligence in academic processes, leading to uncertainty and inconsistent practices among faculty and students. This situation highlights the need to establish regulatory frameworks, training programs, and institutional strategies to guide the ethical and pedagogical use of this tool.

ChatGPT must be considered , such as data privacy, technological dependence, and potential inequalities in access to technology. Cáceres-Mesa (2026) emphasizes that the integration of artificial intelligence in higher education should be analyzed from a comprehensive perspective, considering not only the pedagogical benefits but also its implications for academic well-being and educational equity.

Baig & Yadegaridehkordi (2024) conducted a systematic literature review that maps the current state of research on ChatGPT in higher education. Their main contribution lies in identifying theoretical and methodological gaps in existing studies, noting that much of the research focuses on initial perceptions and exploratory uses, with little empirical evidence on long-term impacts on learning. The authors also highlight key challenges such as the reliability of responses, academic ethics, and the need for robust conceptual frameworks to guide future research.

Sok & Heng (2024) offer an integrative perspective by analyzing opportunities, challenges, and strategies for using ChatGPT in higher education. Their review emphasizes that the tool can enhance active learning, immediate feedback, and the development of academic skills, provided it is accompanied by clear pedagogical strategies. Furthermore, they propose practical guidelines for teachers and institutions, underscoring the importance of institutional policies, teacher training, and redesigned assessments to prevent misuse.

Alafnan et al. (2023) focus their analysis on the use of ChatGPT in communication, academic writing, and business writing courses. Their main contribution lies in demonstrating that the tool can improve the quality of writing and the organization of academic discourse when used as a support, not a substitute, for the student. However, they warn about the risk of technological dependence and emphasize the need to integrate activities that foster authorship, reflection, and critical thinking.

Thuy Mai et al. (2024) employ a SWOT analysis approach to examine the use of ChatGPT in teaching and learning. This approach allows for the systematic identification of the tool's strengths, opportunities, weaknesses, and threats in educational contexts. The authors highlight accessibility and personalized learning as strengths, while pointing to the loss of deep cognitive skills and ethical dilemmas as threats, reinforcing the need for pedagogically oriented use.

Alghazo et al. (2025) provide empirical evidence from the perspective of Pakistani university students, focusing on academic integrity and the ethical challenges associated with the use of ChatGPT. Their findings reveal ambivalent perceptions: students recognize the tool's value as a learning support tool but express concerns about plagiarism, fair assessment, and the lack of clear regulations. This study underscores the importance of cultural and regulatory context in the adoption of artificial intelligence in higher education.

Arroyo-Bello et al. (2025) analyze the opportunities and challenges of ChatGPT in university teaching of health sciences. Their narrative review highlights the tool's potential to support clinical learning, the understanding of complex concepts, and continuing education. However, they caution that its unsupervised use can pose risks to professional training, especially in disciplines where ethical and clinical decision-making is fundamental.

Dhananjaya et al. (2024) emphasize the role of ChatGPT in personalizing learning and supporting teachers. The authors argue that the tool can help adapt content to students' individual needs and reduce the administrative burden on teachers. Their contribution focuses on the idea that artificial intelligence can strengthen educational quality if integrated as a complementary resource within student-centered pedagogical models.

Chang et al. (2025) explore the opportunities and challenges of using ChatGPT in sports education, broadening

the debate to include less studied areas. Their research shows that the tool can support lesson planning, tactical analysis, and theoretical learning, although it presents specific challenges related to the assessment of practical performance and the authenticity of learning in physical and experiential contexts.

Zhai (2023) addresses the potential of ChatGPT in science education, highlighting its ability to support conceptual understanding, scientific reasoning, and inquiry-based learning. However, the author cautions that the uncritical use of the tool can undermine scientific literacy if students accept answers without question, reinforcing the need to integrate artificial intelligence into critical pedagogical approaches.

James & Filgo (2023) analyze the role of ChatGPT within the framework of information literacy, particularly in the field of university library science. Their main contribution lies in linking the use of artificial intelligence with the need to strengthen skills such as source evaluation, critical thinking, and the ethical use of information, emphasizing that ChatGPT should not replace these skills but rather serve as a catalyst for their development.

Rahman & Watanobe (2023) offer a balanced analysis of the opportunities, threats, and strategies associated with the use of ChatGPT in education and research. The authors highlight that, while the tool can improve academic productivity and access to knowledge, it also introduces risks related to originality, privacy, and technological dependence. Their contribution lies in proposing institutional strategies to mitigate these risks.

Adeshola & Adepoju (2023) critically examine the opportunities and challenges of ChatGPT in diverse educational contexts. Their study highlights that the tool's acceptance depends largely on the pedagogical preparation of teachers and students, as well as the institutional context. The authors emphasize that technology alone does not guarantee educational improvements, but rather requires conscious and contextualized integration.

Mbakwe et al. (2023) offer a critical reflection from the field of medical education, analyzing the performance of ChatGPT in exams such as the USMLE. The authors argue that the tool's success in these tests highlights structural weaknesses in traditional assessment and teaching models, prompting a rethinking of educational objectives and assessment methods in higher education.

Tlili et al. (2023) use ChatGPT as a case study to analyze the use of chatbots in education, highlighting their ambivalent nature. The authors argue that the tool can act as both a pedagogical support and a source of risks, depending on how it is used. Their main contribution is the need to adopt a critical and ethical approach that recognizes this duality.

Adel et al. (2024) address the promises and challenges of ChatGPT from computational and ethical perspectives. Their analysis highlights the importance of considering aspects such as algorithmic transparency, fairness, and accountability in the educational use of artificial intelligence. The authors conclude that the adoption of ChatGPT in higher education must be accompanied by robust ethical frameworks and clear regulations.

The studies analyzed agree that ChatGPT has established itself as an emerging tool with high potential to transform teaching and learning processes in higher education. In general, its capacity to support self-directed learning, personalize instruction, and facilitate the understanding of complex content across diverse disciplines—from science and health to sports education and academic writing—is widely recognized. Generative artificial intelligence is presented as a resource that can optimize access to knowledge, improve academic efficiency, and strengthen specific cognitive and digital skills among students.

A key contribution of the literature is the identification of pedagogical opportunities associated with the use of ChatGPT as a support tool, not as a substitute for human learning. Its usefulness for immediate feedback, personalized academic support, and assistance to teachers is highlighted, especially in planning activities, developing materials, and addressing student diversity. Furthermore, it is recognized that its appropriate integration can foster active methodologies, inquiry-based learning, and the development of communication and academic writing skills.

However, studies also consistently warn of significant risks stemming from its uncritical use. Among the main challenges are cognitive superficiality, technological dependence, and the potential decrease in intellectual effort, as well as threats to academic integrity and the authorship of university work. The automatic acceptance of generated answers and the lack of critical questioning can weaken analytical thinking, especially in contexts where clear pedagogical guidelines are lacking.

Another recurring theme in the contributions is the need to redefine teaching roles and assessment systems in higher education. The presence of ChatGPT compels a rethinking of traditional practices focused on information reproduction, promoting authentic assessments, more reflective learning processes, and an emphasis on higher-order cognitive skills. In this context, the teacher's role is strengthened as a pedagogical mediator, ethical guide, and designer of learning experiences enriched by artificial intelligence.

From an institutional perspective, the urgent need to establish clear policies, regulatory frameworks, and training programs to guide the responsible use of ChatGPT is emphasized. The lack of guidelines leads to unequal practices, academic uncertainty, and ethical tensions, particularly regarding assessment, data privacy, and equitable

access to technology. Furthermore, the importance of developing digital, information, and AI ethics literacy skills in both teachers and students is highlighted.

Finally, the contributions agree that the integration of ChatGPT into higher education should not be analyzed solely from a technological perspective, but rather as a complex educational phenomenon with pedagogical, ethical, social, and cultural implications. Its responsible use requires a critical, humanistic, and contextualized approach that allows us to leverage its benefits without compromising educational quality, academic well-being, or the fundamental principles of university education.

The integration of ChatGPT into higher education implies a profound transformation of traditional pedagogical models. To leverage its opportunities and mitigate its challenges, it is necessary to design teaching strategies that promote the critical and reflective use of the tool. This includes the implementation of active learning methodologies, authentic assessment, and the development of digital and ethical competencies in both students and faculty.

From an institutional perspective, it is essential to establish clear policies on the use of artificial intelligence in higher education, as well as continuing education programs for faculty and students. Alkaabi et al. (2025) emphasize that the responsible adoption of ChatGPT requires the definition of specific competencies, the development of codes of ethics, and the cross-cutting integration of artificial intelligence into curricula.

ChatGPT represents a tool with high potential for transforming university learning, provided its use is framed within sound pedagogical, ethical , and institutional principles. Its critical and reflective integration can contribute to strengthening higher education, while its uncritical implementation can generate significant risks to educational quality and the holistic development of students.

CONCLUSIONS

The analysis shows that ChatGPT has established itself as a tool with high transformative potential in higher education, capable of significantly influencing teaching and learning processes. Its ability to support self-directed learning, personalize the educational experience, and facilitate immediate access to complex information and explanations represents a significant opportunity to strengthen university education in diverse disciplinary contexts.

However, the findings also show that the use of ChatGPT presents substantial challenges that cannot be ignored. These include risks associated with cognitive superficiality, technological dependence, and threats to academic integrity, especially when the tool is used uncritically or without clear pedagogical guidance. These problems demonstrate that simply incorporating artificial intelligence does not guarantee improvements in educational quality; rather, it requires conscious, reflective, and ethically grounded use.

One of the study's central contributions is the identification of the need to redefine teaching roles and assessment systems in higher education. The presence of ChatGPT necessitates moving beyond traditional approaches focused on information reproduction, promoting pedagogical practices geared toward developing critical thinking, argumentation, creativity, and ethical reflection. In this context, the teacher assumes a key role as a pedagogical mediator and guide in the responsible use of artificial intelligence.

From an institutional perspective, the urgent need to establish clear policies, regulatory frameworks, and training programs to guide the use of ChatGPT in university settings is evident. The lack of guidelines generates uncertainty, unequal practices, and ethical tensions that can affect the quality and equity of the educational process. Therefore, the integration of artificial intelligence must include institutional strategies that strengthen the digital, information, and ethical literacy of the entire academic community.

ChatGPT should not be seen as a threat or an automatic solution to the challenges of higher education, but rather as a tool whose educational value depends on how it is integrated into learning processes. Its critical, pedagogically oriented, and ethically responsible incorporation can contribute to strengthening higher education, while its uncritical use can compromise fundamental principles of university education. These conclusions open new avenues of reflection and research on the role of artificial intelligence in building more inclusive, reflective, and humanistic educational models.

REFERENCES

Adel, A., Ahsan, A., & Davison, C. (2024). ChatGPT promises and challenges in education: Computational and ethical perspectives. ***Education Sciences, 14***(8), 814. https://doi.org/10.3390/educsci14080814

Adeshola, I., & Adepoju, A. P. (2023). The opportunities and challenges of ChatGPT in education. ***Interactive Learning Environments, 31***(10), 6159–6172. https://doi.org/10.1080/10494820.2023.2253858

Alafnan, M. A., Dishari, S., Jovic, M., & Lomidze, K. (2023). ChatGPT as an educational tool: Opportunities, challenges, and recommendations for communication, business writing, and composition courses. ***Journal of Artificial Intelligence and Technology, 3***(3), 60–68. https://doi.org/10.37965/jait.2023.0184

Alghazo, R., Fatima, G., Malik, M., Abdelhamid, S. E., Jahanzaib, M., Nayab, D., & Raza, A. (2025). Exploring ChatGPT's role in higher education: Perspectives from Pakistani university students on academic integrity and ethical challenges. *Education Sciences, 15*(2), 158. https://doi.org/10.3390/educsci15020158

Alkaabi, A. M., Abdallah, A., Alblooshi, S., Alomari, F., & Alneaimi, S. (2025). ChatGPT in higher education: Opportunities, challenges, and required competencies in the absence of guiding policies. *Journal of Education and e-Learning Research, 12*(2), 153–164. https://doi.org/10.20448/jeelr.v12i2.6746

Arroyo-Bello, E., González-Toledo, B., Abad-Valle, J., Rodríguez-Gómez, P., & Garrigues-Ramón, M. (2025). Exploring the challenges and opportunities of ChatGPT in university teaching for health sciences: A narrative review. *Cureus, 17*(10), e94259. https://doi.org/10.7759/cureus.94259

Baig, M. I., & Yadegaridehkordi, E. (2024). ChatGPT in higher education: A systematic literature review and research challenges. *International Journal of Educational Research, 127*, 102411. https://doi.org/10.1016/j.ijer.2024.102411

Cáceres-Mesa, M. L. (Comp.). (2026). *Higher education in the age of artificial intelligence: Pedagogy, assessment, and well-being*. Sophia Editions.

Chang, S.-H., Chen, S.-Y., & Chang, C.-H. (2025). Exploring opportunities and challenges toward ChatGPT for inclusion in sport education. *Journal of Hospitality, Leisure, Sport & Tourism Education, 37,* 100572. https://doi.org/10.1016/j.jhlste.2025.100572

Dhananjaya, G. M., Goudar, R. H., Govindaraja, K., Kaliwal, R. B., Rathod, V. K., Deshpande, S. L., Kulkarni, A., & Hukkeri, G. S. (2024). Enhancing education with ChatGPT: Revolutionizing personalized learning and teacher support. *EAI Endorsed Transactions on Internet of Things, 10*. https://doi.org/10.4108/eetiot.6998

James, A. B., & Filgo, E. H. (2023). Where does ChatGPT fit into the Framework for Information Literacy? The possibilities and problems of AI in library instruction. *College & Research Libraries, 84*(9). https://crln.acrl.org/index.php/crlnews/article/view/26067/33996

Mbakwe, A. B., Lourentzou, I., Celi, L. A., Mechanic, O. J., & Dagan, A. (2023). ChatGPT passing USMLE shines a spotlight on the flaws of medical education. *PLOS Digital Health, 2*(2), e0000205. https://doi.org/10.1371/journal.pdig.0000205

Munaye, Y. Y., Admass, W., Belayneh, Y., Molla, A., & Asmare, M. (2025). ChatGPT in education: A systematic review on opportunities, challenges, and future directions. *Algorithms, 18*(6), 352. https://doi.org/10.3390/a18060352

Rahman, M. M., & Watanobe, Y. (2023). ChatGPT for education and research: Opportunities, threats, and strategies. *Applied Sciences, 13*(9), 5783. https://doi.org/10.3390/app13095783

Sok, S., & Heng, K. (2024). Opportunities, challenges, and strategies for using ChatGPT in higher education: A literature review. *Journal of Digital Educational Technology, 4*(1), ep2401. https://doi.org/10.30935/jdet/14027

Thuy Mai, D. T., Van Da, C., & Van Hanh, N. (2024). The use of ChatGPT in teaching and learning: A systematic review through SWOT analysis approach. *Frontiers in Education, 9,* 1328769. https://doi.org/10.3389/feduc.2024.1328769

Tlili, A., Shehata, B., Adarkwah, M. A., Bozkurt, A., Hickey, D. T., Huang, R., & Agyemang, B. (2023). What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education. *Smart Learning Environments, 10,* 15. https://doi.org/10.1186/s40561-023-00237-x

United Nations Educational, Scientific and Cultural Organization. (2023). *ChatGPT and artificial intelligence in higher education: Quick start guide*. https://unesdoc.unesco.org/ark:/48223/pf0000385146

Yu H. (2024). The application and challenges of ChatGPT in educational transformation: New demands for teachers' roles. *Heliyon*, *10*(2), e24289. https://doi.org/10.1016/j.heliyon.2024.e24289

Zhai, X. (2023). *ChatGPT for next generation science learning*. SSRN. https://ssrn.com/abstract=4331313

Conflicts of Interest:

The author declares no conflicts of interest.

Author Contributions:

Esmaeil Sadri-Damirchi: Conceptualization, data curation, formal analysis, investigation, methodology, supervision, validation, visualization, original draft writing, and writing, review, and editing.

Ethical statement:

The study was based on the analysis of documentary sources and publicly available data, and therefore did not involve the direct participation of human subjects. No personally identifiable information was handled.