THE AI STUDENT: BALANCING OPPORTUNITIES AND CHALLENGES IN HIGHER EDUCATION

by

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The AI student: Balancing opportunities and challenges in higher education

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Abstract

This systematic narrative review examines students' challenges and opportunities when using Artificial Intelligence in higher education. The study identifies four major themes through 51 peer-reviewed articles published between 2022 and 2025: AI Adoption and Usage Behavior, Learning Benefits and Opportunities, Challenges and Risks, and Impact on the Student Learning Experience. Findings reveal that while AI offers significant advantages through personalized learning, enhanced writing support, and broadened knowledge acquisition in higher education, students face challenges related to academic integrity, reduced research skills, and AI-generated information accuracy. The study shows that 66% of university students actively use AI tools for academic work, highlighting its growing influence in education. This research provides insights for understanding how students navigate AI integration in higher education and suggests areas for future investigation, particularly regarding privacy concerns and dependency risks.

Keywords: artificial intelligence in higher education, challenges, opportunities, student, higher education, and undergraduate.

Introduction

The use of Artificial Intelligence (AI) powered applications by students is expanding (Crompton & Burke, 2023). According to Garrell and Mayer (2023), a survey of 6,300 German university students in November 2023 revealed that about 66% had already engaged with AI tools to assist their academic work. The latest advancements in educational technology, like ChatGPT-4, Tome AI, Google Docs, and more, offer students innovative ways to interact with course content, fostering more profound engagement with the material (Ruiz-Rojas et al., 2024). Students can input multiple documents and media items in the form of text, images, diagrams, and screenshots into AI platforms, with the output generating content that can assist higher education students with writing research papers, examining and performing text analysis, assisting in proofreading, and acting as a tutor in exam preparation (Garrell & Mayer, 2023). This study addresses research gaps by synthesizing existing literature to identify and analyze recurring themes in how students interact with AI technologies in higher education.

Problem Statement

Artificial intelligence presents opportunities and challenges for students in higher education institutions (Kurtz et al., 2024). Artificial intelligence is rapidly transforming higher education, with 66% of university students actively using AI tools for academic work (Garrell & Mayer, 2023). AI has the potential to impact higher education students by broadening knowledge and learning processes on diverse subjects, promoting personalized learning experiences, and facilitating the writing process. Its implementation also raises significant challenges for students in higher education with academic dishonesty, reduction of research skills, and inaccurate information displayed by Generative AI (Kurtz et al., 2024). Therefore, it is imperative to investigate the common challenges and advantages students encounter when using AI for academic purposes.

Purpose of the Study

This research seeks to identify prevalent themes in existing literature that discuss the common challenges and opportunities students face when using AI in higher education. Consistent with the study's purpose, this research will answer the following question:

Research Question

RQ1: What themes can be identified in key articles on the challenges and opportunities students encounter when using Artificial Intelligence in higher education?

Review of the Literature

Artificial intelligence (AI) provides opportunities (Ouellette, 2024) and challenges students must navigate consistently in evolving academic settings (Portella-Cleves & Rodriguez-Hernandez, 2023). This literature review examines the AI challenges and opportunities higher education students face by analyzing current research and literature.

AI Learning Challenges for Students in Higher Education

Academic Dishonesty

The arrival of AI is bringing academic dishonesty as a concern for the academic integrity of the content being produced by higher education students (Alahasees et al., 2024). AI provides higher education students the tools to receive written responses to questions or ideas in real-time. The content displayed to the students is sophisticated and generally of good quality (Cong-Lem et al., 2024). The ability of AI to analyze complex information and display solutions leads to opportunities for ethical and academic dishonesty in higher education student's produced content (Azoulay et al., 2023). Academic dishonesty for higher education students is more prevalent because of their access to AI applications, which "raises concerns about the fundamental integrity of the educational process, potentially compromising the core values of honesty, effort, and achievement that are essential to scholarly endeavors" (Alasgarova & Rzayev, 2024, p. 314). Academic dishonesty among higher education students is increasing due to AI's ability to complete the student's assignments on their behalf and then plagiarize the content being produced, breaching basic academic integrity guidelines (Alasgarova & Rzayev, 2024) and with ChatGPT being able in certain instances to pass medical, law and English test (Lee et al., 2024). Research shows that in a study at Aksaray University, 60% of students surveyed did not find ethical issues with using ChatGPT for academics (Dilekli & Boyraz, 2024). Benito (2023) notes students in higher education need to learn to utilize AI to contribute to their learning and correctly reference material if AI is generated to avoid academic dishonesty.

Reduction of Research Skills

AI impacts higher education students by reducing their basic research skills. AI can mimic human thought and decision-making, where students research and interact with each other, analyze the information being researched, think intelligently, and reason contextually. AI bypasses these basic research steps and decision-making with increased speed, high-powered computers, and real-time information (Slimi, 2022). The effects of AI prevent higher education students from developing the critical thinking skills necessary to progress in the real world and act as a quick guide to answers without the ability to understand underlying decision-making processes (Armena, 2024). Zhang et al. (2024) research indicates a link between regular AI platform usage, decreased cognitive skills, and diminished ability to retain information.

Inaccurate Information

Inaccurate information also significantly challenges students in higher education (Lee et al.). Researchers have discovered that inaccurate reference information is generated by displaying references to false material (Aguilera-Hermida, 2024) by stating, "ChatGPT showed that the language model performed in a dishonest way. Fabrication or making up data and reporting them is one of the forms of research misconduct" (Aguilera-Hermida, 2024, p. 44). The research explains that AI can appear to have consciousness and intelligence. However, inaccurate information can still be produced simultaneously, so students can not differentiate between true and false (Aguilera-Hermida, 2024). Alahasees et al. (2024) explain how AI's inaccurate display of information can also reinforce biases, stating that "many inherent limitations observed in ChatGPT, including the generation of inaccurate information, biases in the training data that may

reinforce existing biases and privacy concerns" (Alahasees et al., 2024. p. 93). Diversity in language can also affect the inaccurate information displayed to higher education students Lee et al. (2024). Researchers state, "Students who are not using their first language, or even students with particularly strong accents, may find themselves at a disadvantage in some situations using AI-powered voice recognition and dictation tools, as these applications may struggle with accents and dialects, potentially leading to misunderstandings or miscommunications" (Lee et al., 2024. p. 2). Walczak and Cellary (2023) note inaccuracies are challenging to detect and do not give indications that the information is wrong, so AI results must be fact-checked and verified.

Opportunities for Regenerative Artificial Intelligence in Higher Education

Broadening Knowledge

AI can broaden knowledge and learning processes on diverse subjects (Kurtz et al., 2024). The literature discusses AI's processing and information power in providing answers to students' questions and places obtaining knowledge over memorization of content (Alahasees et al., 2024). Alahasees et al. (2024) explain that AI models "can address inquiries, compose scholarly papers, resolve intricate problems, elucidate complex subjects, offer virtual educational assistance, facilitate language acquisition, engage in programming instruction, provide pedagogical services, and contribute to academic investigations" (Alahasees et al., 2024. p. 93). Brainstorming and idea generation that AI produces elevate students in broadening their knowledge by using AI as a jumping point for idea generation and brainstorming (Ouellette, 2024). Malik et al. (2023) find that students value AI's ability to suggest relevant essay topics and extract insightful data.

AI is a creative catalyst, fostering many opinions and approaches, leading to unexpected and potentially groundbreaking solutions (Alasgarova & Rzayev, 2024). Research describes using AI "to elucidate historical cartoons, underscoring its versatility in conveying ideas across genres and registers. Furthermore, AI's proficiency in explaining mathematical equations and problems, as well as its capability to create images, enhances comprehension and fosters creativity in learning" (Alasgarova & Rzayev, 2024. p. 321). Rasul et al. (2023) suggest that learning with technology helps students find information more easily. It also helps them understand what they find, put it together in a way that makes sense, and build a more substantial knowledge base.

Personalized Learning

Personalized learning is a student-centric approach that tackles the issue of disengagement in education. It tailors learning experiences to individual needs, interests, and pace. This is achieved using AI, which offers adaptive content, interactive experiences, and data analysis. Providing materials that adjust to the student's knowledge level, engaging activities that promote a deeper understanding of the material, and insights into student performance to optimize learning outcomes, AI caters to each student's learning pace, allowing them to master concepts at their rhythm (Zia, 2023). Li (2023) notes that AI will continue to be an asset in personalized learning and tailoring students' needs, enhancing their overall learning experience.

Research also suggests AI can significantly impact students' learning (Armena, 2024). It personalizes the learning experience by considering student performance and subject difficulty. This customization can transform education by boosting student engagement and achievement (Alasgarova & Rzayev, 2024). AI empowers students to identify their strengths, weaknesses, and preferred learning styles by analyzing student performance data and leveraging its learning algorithms (Pratama et al., 2023). Li (2023) suggests that AI can tailor knowledge presentation to resonate with students, leading to improved comprehension and retention of complex concepts.

AI personalized learning innovation holds the key to unlocking customized learning experiences, potentially transforming education while at the same time increasing student engagement and achievement in educational practices (Alasgarova & Rzayev, 2024). In higher education, Slimi (2022) suggests that AI

might surpass human instructors in tailoring learning styles and teaching methods for higher education (Slimi, 2022).

Facilitating the Writing Process

Research suggests that AI can help higher education students by facilitating their writing process (Kurtz et al., 2024). The methods and techniques of writing and how writers write have historically adapted to new learning instruments and technologies that have emerged over time (Bedington et al., 2024). AI facilitates the writing process by impacting "how we write, what we write, and the networks and assemblages in which we write" (Bedington et al., 2024. p. 1). Areas of higher education students where AI assists in reducing pressure on the individual (Kurtz et al., 2024), providing detailed reasons for content generated (Alasgarova & Rzayev, 2024), and in content creation, distribution, and improvement (Stojanovic et al., 2023). Malik et al. (2023) note that AI has positively impacted students' writing abilities in academic essays.

Research states that AI can reduce the pressure and cognitive stress students face with writing assignments. AI can provide a sense of control over the writing process while at the same time providing instant feedback on assignments and enhancing the student's writing ability (Kurtz et al., 2024). AI also facilitates the writing process, with Alasgarova and Rzayev (2024) stating that AI "demonstrates the ability to provide detailed explanations, step-by-step solutions, and quick responses to streamline tasks, thus alleviating stress and aiding in meeting deadlines" (Alasgarova & Rzayev, 2024. p. 231). AI can assist with the writing process by correcting grammar, alignment, and structure of the assignment, finding issues with citations required for academic publication, and adhering to the required standards the writing must follow (Khalifa & Albadawy, 2024). According to Malik et al. (2023), AI tools can expand students' perspectives and improve their writing abilities as a valuable support system for academic success.

Stojanovic et al. 2023 break down the writing process and how AI can impact that process into three distinct parts: content creation, improvement, and distribution. Stojanovic et al. (2023) continue by discussing how content creation facilitates the writing process by AI assisting students and providing inspiration and new ideas to existing material. AI elevates content improvement in writing by taking the student's initial thoughts and rewriting the information. Improvements are also made by correcting grammar errors and restructuring sentences to provide a better material flow. Stojanovic et al. (2023) explain that AI facilitates the writing process through content distribution by learning from the students' searching habits, searching history, and criteria used in those searches to learn how the student what the student's needs are. Lastly, the authors state, "Instead of merely a tool for content creation, artificial intelligence has transcended the conventional perception and is now applied across various phases of the creative process" (Stojanovic et al., 2023. p. 70). Malik et al.(2023) note that AI has expanded student's perspectives and writing abilities. It plays a significant role in supporting and empowering students in their academic endeavors.

The literature review details that AI creates notable challenges with academic integrity and skill development challenges, but its thoughtful implementation also offers valuable opportunities to enhance student learning outcomes and educational experiences.

Research Methodology

This qualitative study presents a systematic narrative review examining peer-reviewed journal articles and online sources published between 2022 and 2025 to answer the research question of what themes can be identified in key articles on the challenges and opportunities students encounter when using Artificial Intelligence in higher education. Xiao and Watson (2019) justify using systematic narrative review as an appropriate methodology for synthesizing and describing literature review approaches, mainly when presenting comprehensive methodological guidance across multiple disciplines. The reviewed articles focus on higher education, academic challenges and constraints, and the opportunities and affordances students face with artificial intelligence's emergence. Synthesizing multiple individual studies enables the examination of participant's meanings, experiences, and perspectives (Lachal et al., 2017) to show a

foundational understanding of the existing research landscape by highlighting both areas of consensus and knowledge gaps that require further investigation (Rados et al., 2024). A thematic analysis examines the key themes arising from the research. Thematic analysis is a qualitative research technique that identifies and analyzes recurring patterns, themes, or concepts within a dataset (Miller, 2024). In qualitative research, "themes are conceptual units that emerge from clustering interrelated codes, offering a means to organize and interpret the data" (Creswell & Poth, 2018, p. 328). Inclusion criteria are based on the title and abstract text, publication date, language, and content related to the challenges and opportunities students encounter when using artificial intelligence in higher education must be included. Following Xiao and Watson's (2019) systematic approach to the literature review, this process of literature identification, screening, and thematic analysis provides a rigorous framework for examining current research on how students navigate artificial intelligence in higher education, enabling the identification of key challenges, opportunities, and emerging patterns across the literature.

Literature Review Process

Critical articles were selected and used in the literature review on the challenges and opportunities students encounter when using Artificial Intelligence in higher education. Okoli's (2015) *A Guide to Conducting a Standalone Systematic Literature Review* and Xiao and Watson's (2019) *Guidance on Conducting a Systematic Literature Review* guides the literature review process criteria by detailing inclusion criterion, literature identification, quality and eligibility assessment, and iterations of data extraction and analysis. The contributions of the articles on the challenges and opportunities students encounter when using Artificial Intelligence in higher education are categorized into emerging themes and analyzed in depth to understand their significance and implications for students in higher education who are using artificial intelligence for academic purposes**.**

Inclusion Criterion

Articles were initially screened for challenges and opportunities students encounter using Artificial Intelligence in higher education based on their titles and abstracts. Subsequently, a more in-depth review of key components was also screened for relevant publication dates from 2022-2025, publication language written in English, and peer-reviewed full-journal articles were conducted to determine final inclusion in the literature review. Articles not pertinent to the research were omitted. Complete reference information was documented for all articles deemed relevant to the study. This approach ensured a comprehensive, trustworthy, and systematic identification of pertinent literature on the chosen topic (Okoli, 2015).

Literature Identification

A keyword-based search strategy was utilized to identify and reduce the volume of relevant literature to a manageable scope for analysis or practical screening (Okoli, 2015). The following keywords were employed: "artificial intelligence in higher education," "challenges," "opportunities," "student," "higher education" and "undergraduate." An initial search was conducted on GALILEO's advanced search through Middle Georgia State University Library using these keywords, resulting in 332 articles. The literature identified was narrowed further by relevant publication dates from 2022-2025, publication language written in English, and peer-reviewed full-journal articles needed to address the research question of what themes can be identified in key articles on the challenges and opportunities students encounter when using Artificial Intelligence in higher education.

Quality and Eligibility Assessment

To prevent biased and inaccurate information, the review quality was carefully evaluated and assessed (Shaheen et al., 2023) by using full-text peer-reviewed journal articles (Xiao & Watson, 2019). Technical reports, conferences, online presentations, and outdated sources were excluded (Xiao & Watson, 2019).

Data Extractions and Analysis

The research question, challenges and opportunities students encounter using artificial intelligence in higher education guide the data selection to be extracted (Okoli, 2015). The extracted journal articles are categorized into themes: "formulating the research problem, developing and validating the review protocol, searching the literature, screening for inclusion, assessing quality, extracting data, analyzing and synthesizing data, and reporting the findings" (Xiao & Watson, 2019, p. 94). Data extraction was performed using Microsoft Word, Microsoft Excel, and Adobe Acrobat.

Results

The results report the findings from the literature search, the inclusion criteria, and the quality and eligibility assessment (Xiao & Watson, 2019) to identify themes of the challenges and opportunities students encounter when using Artificial Intelligence in higher education. The initial search results in Galileo returned 332 articles. The research results were further refined to include relevant publication dates from 2022-2025, publication language written in English, and peer-reviewed full-journal articles were conducted to determine final inclusion in the results. Articles not pertinent to the research were omitted. Fifty-one articles were selected for review and analysis, with 50% being qualitative, 36% being quantitative, and 14% being mixed methods. Articles were distributed across three years: 2024 (70%), 2023 (14%), and 2022 (3%) detailed in Table 1. Following Xiao and Watson's (2019) systematic narrative review methodology that requires identifying patterns and synthesizing findings across multiple studies, four distinct themes emerged from the analysis. These themes emerged through thematic analysis of the 51 selected articles, revealing key patterns in how students navigate artificial intelligence in higher education. The four themes, AI adoption and Usage Behavior, Learning Benefits and Opportunities, Challenges and Risks, and Impact on the Student Learning Experience, are summarized in Tables 2-5, each addressing specific aspects of the challenges and opportunities students encounter when using AI in higher education.

Table 1

Summary of Search Results

Year	Article Count	Published Percentage	Qualitative	Quantitative	Mixed Methods
2024	35	70%	17	13	5
2023	14	27%	7	4	3
2022	2	3%	1	1	0

Theme 1: AI Adoption & Usage Behavior

Theme 1 reveals how students in higher education adopt and engage with artificial intelligence tools. Research demonstrates that students who perceive clear advantages of AI technologies show stronger intentions to use them in their studies. The data confirms a significant positive correlation between students' recognition of AI's benefits and willingness to incorporate these tools into their academic work (Ayanwale & Molefi, 2024). Abdaljaleel et al.'s (2024) research also supports student AI adoption and usage behavior by discussing university students' key factors contributing to technology adoption, often including perceived ease of use, perceived usefulness, a positive technology disposition, the influence of social networks, low anxiety levels, and a low perception of risk.

The research by Adzic et al. (2024) further examines student engagement with AI through four key dimensions: efficiency, interaction, affect, and intention. Their findings demonstrate that students exhibit favorable attitudes toward AI technologies, primarily due to their recognition of AI's capabilities in

enhancing personalized learning experiences, supporting writing tasks, and facilitating research processes. This positive perception stems from students' practical experience with AI's educational benefits.

Research in Saudi Arabia (Al-Mamary et al., 2024) reveals that AI adoption and usage are educational tools and technological advancements that excite students. Integrating AI, particularly in academic settings, has demonstrated significant benefits for students' learning outcomes while allowing them to engage with cutting-edge technology. Students value AI's ability to streamline academic tasks, optimize time management, and provide personalized learning support, ultimately enhancing their educational experience and technological proficiency (Al-Mamary et al., 2024). Students adopt and use AI tools more readily when recognizing how naturally these technologies fit into their existing study routines. As students experience direct benefits in their academic efficiency and achievement, their continued usage increases, creating a positive cycle of adoption and engagement with AI-enabled learning (Al-Mamary et al., 2024). Al-Abdullatif and Alsubaie (2024) reinforce this concept in AI adoption and usage by stating "that perceived usefulness, enjoyment, and fees significantly affected students' perceived value and had a significant role in driving students' intention to use" (Al-Abdullatif & Alsubaie, 2024, p. 18) artificial intelligence.

Table 2

Theme 1 Key Reviewed Articles

Author(s)	Year	Description
Ayanwale & Molefi	2024	Explored undergraduate students' intention to embrace chatbots using the diffusion theory of innovation framework, examining relationships between relative advantages, compatibility, and trialability.
Adžić et al.	2024	Comparative study of student attitudes toward GenAI tools in two European countries, developing a novel "Attitude toward AI" scale.
Al-Mamary et al.	2024	Investigated factors influencing university students' intentions to use ChatGPT through task-technology fit theory in the Saudi Arabian context.
Abdaljaleel et al.	2024	A multinational study examining factors influencing university students' attitudes and usage of ChatGPT across Arab countries.
Al-Abdullatif & Alsubaie	2024	Assessed students' use intentions through perceived value and AI literacy, sampling 676 university students.

Theme 2: Learning Benefits and Opportunities

Theme 2 reveals AI for learning benefits and opportunities when using Artificial Intelligence in higher education. Jin et al. (2023) polled higher education students from different disciplines in liberal arts, social sciences, the science of arts, and engineering science in forethought, performance, and reflections. The students identified AI benefits and opportunities in study planning, learning strategies, checking prior knowledge, preparing for the next lesson, understanding contents, preventing procrastination, establishing confidence, and providing an easy way to seek guidance.

AI presents the potential to foster intellectual growth by stimulating curiosity, encouraging exploration, and promoting higher-order thinking skills within higher education. Furthermore, AI can enhance student learning by cultivating digital literacy, fostering positive learning experiences, and encouraging independent learning (Wang & Li, 2024). AI also offers personalized learning pathways that adapt to each student's unique needs and pace. Research at the Megatrend University in Belgrade showed students valued the ability to receive immediate feedback on their work, access learning materials anytime, and engage with

content that matches their learning style. AI also improved student motivation and academic achievement and enhanced communication capabilities (Baltezarević & Baltezarević, 2024). Jo (2024) also explores research on the learning benefits and opportunities and uses the example of the chatbot ChatGPT to acknowledge that engaging with ChatGPT allows students to acquire new knowledge, which they then integrate into their existing understanding, leading to a more profound and impactful learning experience.

Table 3
Theme 2 Key Reviewed Articles

Author(s)	Year	Description
Jin et al.	2023	Investigated how AI applications support self-regulated learning in online learning environments.
Wang & Li	2024	Analyzed the impact of AI usage on university students' autonomous learning willingness using the expectation-confirmation model.
Baltezarević & Baltezarević	2024	Explored student attitudes toward AI in personalized learning, examining its impact on ability identification and creativity.

Theme 3: Challenges and Risks

Theme 3 reveals students' challenges and risks when using Artificial Intelligence in higher education. A South Korean survey conducted at Sungkyunkwan University involving 269 undergraduate students identified significant challenges and risks associated with AI use in education. Key concerns included increased laziness, restricted creativity, and impaired cognitive development, including reduced critical thinking and diminished information-judgment abilities. Other challenges highlighted by the research were increased plagiarism and copyright infringement, reduced problem-solving skills, and the potential for students to rely on AI for information without proper evaluation, leading to the dissemination of incorrect information (Zhang et al., 2024).

Additional research states, "Much of the data that artificial intelligence use is imperfect, so it is difficult to expect perfect answers all the time" (Aguilera-Hermida, 2024, p. 46). The researchers describe students as at risk as AI can fabricate inaccurate information, exploit user vulnerabilities, and have students unquestioningly accept false information (Aguilera-Hermida, 2024).

Integrity issues are identified with students using AI to generate assignments (Kazley et al., 2024), having an advantage over students who do not have access to AI, and students focused on prompt engagement rather than subject matter understanding (Ivanov, 2023). Ivanov's (2023) research also revealed a loss of key research skills, overreliance on AI-generated summaries, content quality issues, and excessive AI trust.

Yusuf et al. (2024) discuss student challenges and risks related to AI, acknowledging concerns about privacy, confidentiality, biases in AI systems, and the potential for AI-generated inaccurate information. Students surveyed also expressed concerns about ethical implications and called for greater attention to the role of AI in academic misconduct. Student complacency with AI-generated content and professional growth are also challenges.

Table 4
Theme 3 Key Reviewed Articles

Author(s)	Year	Description
Zhang et al.	2024	Examined AI dependency relationship with academic self-efficacy, stress, and performance expectations.
Aguilera-Hermida	2024	Analyzed accuracy concerns in AI chatbots for educational settings, focusing on false information risks.
Ivanov	2023	Investigated negative aspects of AI in higher education, including biases, privacy concerns, and skill loss.
Kazley et al.	2024	Explored health profession students' perceptions of ChatGPT use and academic integrity.
Yusuf et al.	2024	Examined academic integrity concerns and opportunities in AI adoption from multicultural perspectives.

Theme 4: Impact on the Learning Experience

Theme 4 reveals the impact on students in higher education and the learning experience they encounter with using AI. Kimmel's (2024) research shows that students who used AI for the first two segments of the course surveyed scored 9 points below other students. The same results were reported on the final exam, with students scoring approximately 14 points below the average course score. Other students showed concerns that AI would cause them to fail to meet class objectives and abandon AI use altogether. The research continues by explaining, "These results indicated the tool has value to students, but its use bypassed activities deemed necessary for learning course material" (Kimmel, 2024, p. 127). Kimmel also notes that students found it easier to find information for their assignments, allowing them more time for additional classroom activities.

Xia et al.'s (2023) research on AI's impact on the student learning experience had mixed results. AI offered significant learning flexibility, allowing students to customize their learning environment through multiple input methods, access to audio versions of content, and translation features. This flexibility enabled students to learn independently without the pressure of completing all topics simultaneously. The impact of the learning experience varied significantly based on the student's prior knowledge and language proficiency. Xia et al. (2023) explain that students with substantial prior knowledge benefited more from AI, demonstrating the ability to use sophisticated language, choose practical learning approaches, and reflect meaningfully on their learning.

Xia et al.'s (2024) research discusses the impact on the student learning experience in the form of feedback and self-assessment opportunities. Xia et al. explain students can get instant feedback and grade assessments instantly. The feedback requested can also be given from multiple perspectives, including an unbiased perspective. The student can also learn from AI mistakes and evaluate outcomes based on their knowledge, leading to new ideas and learning questions.

Jo's (2024) research explores student AI engagement's impact on higher education learning outcomes. Findings suggest that increased AI use correlates with improved productivity, faster task completion, enhanced academic performance, and more enjoyable learning experiences. Jo (2024) also discusses challenges and concerns by voicing privacy concerns, technophobia, and AI guilt for possibly violating academic integrity as issues that affected their learning experiences.

Table 5
Theme 4 Key Reviewed Articles

Author(s)	Year	Description
Kimmel	2024	Studied AI-facilitated critical thinking development in project-based service learning.
Xia et al.	2023	Investigated relationships between prior knowledge and AI-supported self-regulated learning.
Xia et al.	2024	Conducted a scoping review on AI's transformation of assessment in higher education.
Jo	2024	A comprehensive study of ChatGPT usage impacts on student learning experiences.

Discussion of Findings

This study conducted a systematic narrative review of peer-reviewed journal articles to explore the research question on students' challenges and opportunities when using Artificial Intelligence in higher education. Following Xiao and Watson's (2019) systematic narrative review methodology, the analysis focused on identifying key themes from the literature regarding students' experiences with AI in higher education settings. The analysis began by identifying sub-themes from the literature, including acceptance factors, usage patterns, technology integration, personalization, learning support, efficiency, innovation, technical issues, ethical concerns, privacy and security, dependency, academic performance, skill development, engagement, and assessment. These sub-themes were then gathered into four primary themes: AI Adoption and Usage Behavior, Learning Benefits and Opportunities, Challenges and Risks, and Impact on the Student Learning Experience. Table 6 presents a detailed breakdown of how these themes emerged from the analysis.

Table 6
Summary of Sub-Categories to Identify Themes

Main Theme	Sub-Theme	Number of Articles
AI Adoption and Usage Behavior	Acceptance Factors	22
	Usage Patterns	6
	Technology Integration	19
	Student Intent	12
Learning Benefits and Opportunities	Personalization	18
	Learning Support	20
	Efficiency	21
	Innovation	20
Challenges and Risks	Technical Issues	8
	Ethical Concerns	19
	Privacy and Security	5
	Dependency	4
Impact on Learning Experience	Academic Performance	12

	Skill Development	19
	Engagement	8
	Assessment	13

The results from the review reveal several patterns in how students interact with AI in higher education. The literature predominantly focuses on acceptance factors (43%), efficiency (41%), and learning support (39%), highlighting these as critical areas shaping students' AI experiences in higher education. Fewer studies examined engagement (16%), privacy and security (10%), or dependency issues (8%). AI adoption shows promise for enhancing learning opportunities through personalization and efficiency but presents significant challenges to academic integrity and skill development. The distribution of articles, with 70% published in 2024, indicates an evolving understanding of AI's role in higher education.

The high AI adoption rate of 66% identified by Garrell and Mayer (2023) corresponds with findings from Al-Mamary et al. (2024), who noted that students adopt and use AI tools more readily when recognizing how naturally these technologies fit into their existing study routines. These adoption patterns align with the identified Learning Benefits theme in the analysis. Regarding challenges, Zhang et al.'s (2024) research reinforces the concerns identified in the Challenges and Risks theme, highlighting how AI use can lead to increased complacency, restricted creativity, and impaired cognitive development, including reduced critical thinking and diminished information-judgment abilities.

Implications of Findings

The findings from this systematic review have significant implications for how students engage with the challenges and opportunities AI presents in higher education. Identifying four interconnected themes provides a theoretical framework for understanding the student-AI relationship in higher education. This framework extends beyond the binary "beneficial versus harmful" perspective often presented in individual studies, offering a more nuanced understanding of how students navigate AI technologies. The findings suggest that technology adoption models must be reconsidered in the context of educational AI, as students' decisions appear driven not only by perceived usefulness (Al-Abdullatif & Alsubaie, 2024) but also by educational values and ethical considerations.

For educators and instructional designers, this review demonstrates the need for practical implications and balanced approaches to AI integration. The high adoption rate of 66% (Garrell & Mayer, 2023) indicates that restriction strategies are likely ineffective, while the identified learning benefits suggest that complete avoidance would deprive students of valuable learning opportunities. Instead, educators might focus on designing assignments that leverage AI's strengths in personalization and content generation (Baltezarević & Baltezarević, 2024) while still developing essential critical thinking skills that Zhang et al. (2024) found could be diminished through overreliance on AI.

The findings about academic integrity concerns (Aguilera-Hermida, 2024) and information accuracy challenges suggest that higher education institutions need comprehensive AI policies beyond simple prohibition. Given the benefits of personalized learning and writing support, policies should focus on proper attribution of AI-generated content, guidelines for appropriate use in different learning contexts, and developing assessment methods that remain valid in an AI-rich environment. The significant research gaps around privacy concerns and dependency risks (Yusuf et al., 2024) indicate that policies should also address data privacy and encourage healthy usage patterns.

These findings suggest that students' success in AI-integrated higher education will increasingly depend on institutional frameworks that thoughtfully incorporate AI tools while protecting academic integrity and

fostering intellectual growth. By providing this comprehensive analysis, this review offers a foundation for developing evidence-based approaches to AI integration in higher education.

Conclusion, Limitations of the Study, and Recommendations for Future Research

This systematic narrative review examined 51 peer-reviewed articles to identify themes regarding the challenges and opportunities students encounter when using AI in higher education. The analysis reveals four major themes shaping these experiences: AI Adoption and Usage Behavior, Learning Benefits and Opportunities, Challenges and Risks, and Impact on the Student Learning Experience.

This review shows how these themes interact to create a picture of AI's role in student learning rather than just listing separate benefits and challenges. The high adoption rate of 66% among university students (Garrell & Mayer, 2023) demonstrates that AI has already become a significant part of higher education, changing how students approach their studies and assignments.

This study contributes to the field by connecting research on personalized learning and writing support with concerns about academic integrity and skill development. By analyzing these different aspects, we provide a more complete understanding of how students navigate AI tools in their education.

Several limitations affect how these findings should be interpreted. The rapid evolution of AI technology means that challenges and opportunities identified in earlier articles may not reflect current student experiences. This limitation likely affected the analysis by emphasizing initial adoption issues rather than showing how students adapt to AI tools over time. Creswell and Poth (2018) noted that research findings can shift as technologies become more established in educational settings.

The high percentage of articles from 2024 (70%) creates a timing problem that limits the understanding of how student experiences with AI have changed over the past year. Xiao and Watson (2019) point out that this clustering of recent publications is common when studying new technologies but restricts the ability to see important patterns. Future researchers should consider tracking specific student groups over extended periods to address this limitation.

The review may have missed important insights from research published in other languages by focusing only on English-language publications. This language limitation potentially excluded different cultural perspectives on how students use AI in their studies. Future reviews should include research published in multiple languages to understand AI in higher education worldwide.

The reliance on published academic articles may have favored positive or noteworthy findings (Okoli, 2015), possibly underrepresenting negative student experiences that might appear in unpublished institutional reports. Future studies could include direct student interviews alongside literature reviews to capture these missing perspectives.

Future research should address several key areas based on specific gaps identified in this review. Studies should examine privacy concerns and dependency risks, which were investigated by only 10% and 8% of articles, respectively, especially given the high adoption rate of 66% reported by Garrell and Mayer (2023). Longitudinal research is needed to determine whether Zhang et al.'s (2024) concerns about reduced critical thinking skills are temporary or persistent. Additionally, researchers should investigate how AI's benefits vary across different academic disciplines and student demographics, building on Xia et al.'s (2023) finding that students with prior knowledge benefit more from AI integration.

Future studies should also evaluate approaches to academic integrity in AI-integrated environments, addressing the ethical concerns highlighted in 37% of reviewed articles. This research would help determine which strategies effectively address Aguilera-Hermida's (2024) concerns about fabricated information while allowing students to benefit from AI's personalized learning opportunities. Researchers can better understand how students navigate AI in higher education by focusing on these areas. Future questions to be answered could include: Will universities adopt AI-integrated curriculums? How will AI literacy impact job market readiness? What ethical frameworks should be in place for AI use in academia?

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