Artificial Intelligence (AI) and The Future of Higher Education: A Systematic Literature Review of Adoption, Research, Ethics, and Teaching & Learning

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DOI: https://doi.org/10.47772/IJRISS.2026.100701174

Received: 13 August 2026; Accepted: 18 August 2026; Published: 24 August 2026

ABSTRACT

Artificial Intelligence (AI), particularly Generative Artificial Intelligence (GenAI), is rapidly reshaping higher education by transforming academic research, teaching practices, learning processes, and institutional approaches to technology adoption. However, the rapid expansion of AI also raises concerns regarding academic integrity, privacy, data ownership, algorithmic bias, misinformation, and responsible use. This systematic literature review (SLR) synthesises recent evidence on the role of AI in higher education, with particular attention to four dimensions: AI adoption, AI-assisted academic research, AI ethics, and AI-enabled teaching and learning. Following the PRISMA framework, studies were identified through Scopus and Web of Science and assessed using predefined inclusion, exclusion, and quality appraisal criteria. From the initial 260 records, the screening and eligibility processes resulted in 20 studies being included in the final qualitative synthesis. The findings reveal that AI-assisted academic research represents the most prominent research area (35%), followed by AI-enabled teaching and learning (25%), AI adoption (20%), and AI ethics (20%). The reviewed studies demonstrate that AI supports literature reviews, academic writing, text revision, data analysis, referencing, personalised learning, feedback, student engagement, and research productivity. At the same time, effective implementation requires AI literacy, critical judgement, ethical awareness, institutional guidance, and appropriate training. The review identifies a significant need for integrated and longitudinal research examining AI adoption, ethical practice, learning outcomes, critical thinking, research quality, and student engagement across diverse disciplines and contexts. The study concludes that AI should function as a supportive technology that complements human judgement rather than replacing academic responsibility, providing implications for universities, educators, researchers, students, and policymakers.

Keywords: Artificial Intelligence; Generative Artificial Intelligence; Higher Education; AI Adoption; AI Ethics

INTRODUCTION

Background of the study

Artificial Intelligence (AI), particularly Generative Artificial Intelligence (GenAI), is becoming increasingly significant in higher education and academic research. The studies reviewed in this document show that AI is being used across postgraduate research activities, including literature reviews, academic writing, text revision, data analysis, referencing, and research productivity.

AI is also increasingly applied to teaching and learning through personalised learning, feedback, adaptive learning, student engagement, and academic support. The review conceptualises AI in higher education through four interconnected dimensions: learning systems, teaching methods, adaptive learning, and ethical considerations. These developments suggest that AI has the potential to enhance educational practices and research productivity while supporting students' learning and self-regulation.

Statement of Problem & Research Gap

Despite these opportunities, the rapid integration of AI creates important challenges for higher education institutions. Concerns include academic integrity, plagiarism, privacy, data ownership, algorithmic bias, misinformation, ethical use, and students' potential over-reliance on AI-generated information. Existing studies have examined these issues from different perspectives, including AI adoption, academic research, ethics, and teaching and learning, but the evidence remains distributed across these separate areas. The review identified 20 studies, with 35% focusing on AI-assisted academic research, 25% on teaching and learning, and 20% each on adoption and ethics. This indicates a research gap in developing an integrated understanding of how these dimensions collectively shape the future of higher education. Furthermore, the selected studies show opportunities for stronger comparative analysis and clearer reporting of limitations. Therefore, this systematic literature review synthesises existing evidence on AI adoption, academic research, ethics, and teaching and learning to provide a more comprehensive understanding of AI's evolving role in higher education.

Research Questions

Research questions are important to a systematic literature review (SLR). The questions provide the foundation and direction for the entire review process. A well-defined research question ensures that the literature search is exhaustive and systematic, covering all relevant studies that address key aspects of the topic (Kitchenham, 2007). The research questions in this SLR are formulated based on the PICo framework. This framework is a mnemonic style used to formulate research questions, particularly in qualitative research, proposed by Lockwood et al. (2015).PICo stands for Population, Interest, and Context. This SLR is done to answer the four research questions below;

RQ1
What factors influence the adoption, acceptance, and continued use of artificial intelligence and generative AI among students and researchers in higher education?

RQ2
How are artificial intelligence and generative AI tools being used to support academic research, writing, literature reviews, and research productivity among students and researchers in higher education?

RQ3
What ethical issues, risks, challenges, and responsible-use practices are associated with the integration of artificial intelligence and generative AI in higher education and academic research?

RQ4
How does the integration of artificial intelligence and generative AI influence teaching, learning, academic performance, student engagement, and educational practices in higher education?

LITERATURE REVIEW

Theoretical Framework

The discussion of AI in higher education is anchored in four theories.;Technology Acceptance Model (TAM), Cognitive Load Theory, Theory of Planned Behaviour and Self-Regulated Learning.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis (1989), is one of the most widely used theoretical frameworks for explaining individuals' acceptance and adoption of new technologies. The model proposes that technology adoption is primarily influenced by two key perceptions: perceived usefulness (PU) and perceived ease of use (PEOU)**.** Perceived usefulness refers to the extent to which an individual believes

that using a particular technology will improve their performance, while perceived ease of use refers to the extent to which they believe that the technology can be used with minimal effort. In the context of artificial intelligence (AI) adoption in higher education and academic research, TAM suggests that postgraduate students are more likely to use AI tools when they perceive them as useful for improving research productivity, academic writing, literature reviews, data analysis, and learning outcomes. Similarly, AI tools that are easy to understand, accessible, and convenient are more likely to encourage continued use. TAM also proposes that these perceptions influence users' attitudes and behavioural intentions, which subsequently affect actual technology use. Therefore, TAM provides a useful theoretical foundation for understanding the factors that encourage or discourage postgraduate students from adopting AI in academic research and education.

Cognitive Load Theory

Cognitive Load Theory (CLT), developed by Sweller (1988), provides a useful theoretical foundation for understanding how AI can support academic research among university students. The theory suggests that human working memory has a limited capacity for processing information, particularly when individuals are engaged in complex or unfamiliar tasks. Sweller distinguishes cognitive load into three components**:** intrinsic load, which arises from the inherent complexity of the learning task; extraneous load, which results from unnecessary or poorly designed information or processes; and germane load, which refers to the mental effort devoted to constructing and developing meaningful knowledge. In academic research, university students often encounter cognitively demanding activities such as identifying relevant literature, synthesising information, analysing data, organising ideas, and developing academic arguments. AI-assisted tools can potentially reduce extraneous cognitive load by helping students search and organise information, summarise complex materials, generate preliminary ideas, assist with data analysis, and provide feedback on academic writing. This may allow students to devote greater cognitive resources to higher-order activities such as critical thinking, evaluation, synthesis, and interpretation. However, excessive reliance on AI may also reduce meaningful cognitive engagement if students accept AI-generated information without critical evaluation. Therefore, CLT supports the responsible use of AI as a cognitive aid that complements, rather than replaces, students' own intellectual effort and research skills.

Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB), introduced by Ajzen (1985), provides a useful framework for understanding how university students develop intentions to engage in ethical and responsible artificial intelligence (AI) practices. The theory proposes that an individual's behaviour is primarily influenced by behavioural intention**,** which is shaped by three key factors: attitude, subjective norms, and perceived behavioural control. In the context of AI ethics, students' attitudes refer to their beliefs about the benefits and potential risks of using AI, such as concerns about academic dishonesty, plagiarism, privacy, bias, misinformation, and the responsible use of AI-generated content. Subjective norms reflect the influence of lecturers, peers, universities, and academic policies on students' perceptions of what constitutes acceptable AI use. Perceived behavioural control concerns students' confidence and ability to use AI ethically, including their knowledge of institutional guidelines and skills in evaluating AI-generated information. Therefore, TPB suggests that students are more likely to engage in ethical AI practices when they have positive attitudes toward responsible use, perceive strong social expectations for ethical behaviour, and feel capable of following appropriate guidelines. The theory consequently provides a strong basis for examining the factors influencing ethical AI adoption among university students.

Self-Regulated Learning

Self-Regulated Learning (SRL) theory, developed by Zimmerman (1989), provides a strong theoretical foundation for understanding how artificial intelligence (AI) can support teaching and learning in universities. The theory explains how learners actively manage their own learning through processes of planning, monitoring, controlling, and evaluating their thoughts, motivation, behaviour, and learning strategies. Zimmerman's model commonly describes three cyclical phases: forethought, in which students

set goals and plan learning activities; performance, in which they monitor their progress and apply appropriate strategies; and self-reflection, in which they evaluate their performance and identify areas for improvement. In university education, AI-enabled tools can support these processes by providing personalised learning resources, immediate feedback, explanations, recommendations, and progress monitoring. For example, AI systems can help students identify learning objectives, organise study activities, clarify difficult concepts, and receive feedback on their academic work. Such capabilities can enhance students' autonomy, motivation, and ability to regulate their learning. However, effective AI-supported learning requires students to critically evaluate AI-generated information and remain actively involved in decision-making rather than becoming overly dependent on technology. Therefore, SRL theory supports the integration of AI into university teaching and learning by emphasising AI as a supportive tool that strengthens students' capacity to plan, monitor, and evaluate their own learning.

Conceptual Framework

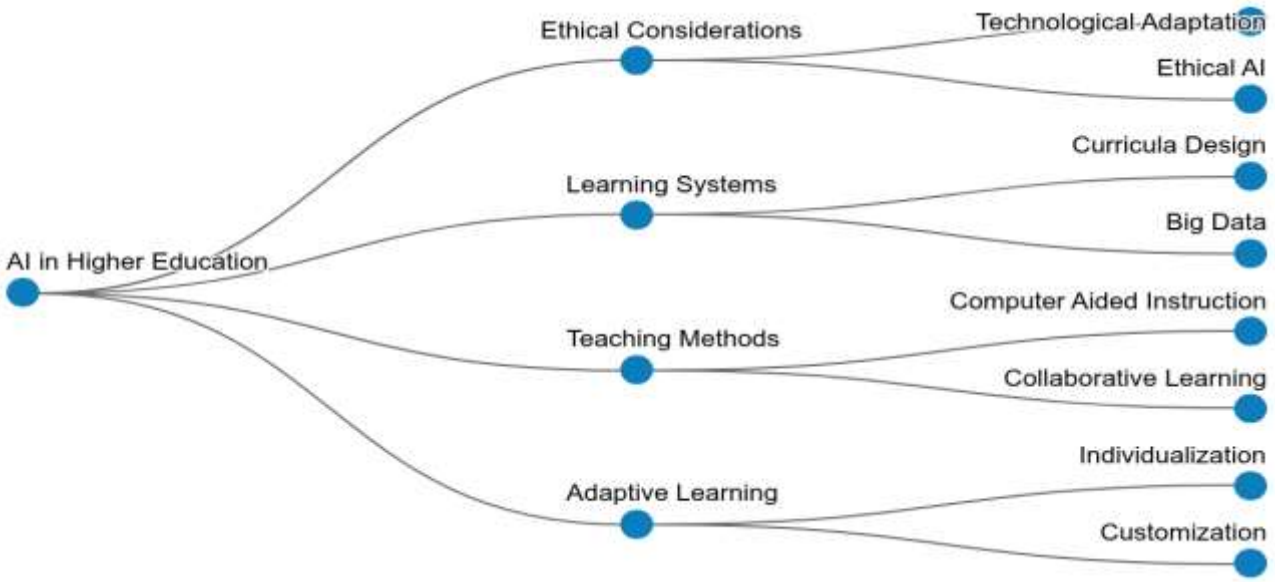

Figure 1- Conceptual Framework

The conceptual framework presented in Figure 1 illustrates how Artificial Intelligence (AI) in higher education can be understood through four interrelated dimensions: learning systems, teaching methods, adaptive learning, and ethical considerations. These dimensions are anchored in four complementary theories that explain AI adoption and its educational implications. First, Cognitive Load Theory (Sweller, 1988) underpins adaptive learning by explaining how AI can reduce unnecessary cognitive demands and provide individualised, customised learning experiences. AI-enabled adaptive systems can adjust content, pace, and difficulty according to students' needs, thereby supporting more effective learning.

Second, Self-Regulated Learning theory (Zimmerman, 1989**)** supports AI-enabled teaching methods by emphasising students' active role in planning, monitoring, and evaluating their learning. AI can facilitate collaborative learning, computer-assisted instruction, and personalised feedback while strengthening students' self-regulatory abilities. Third, the Technology Acceptance Model (TAM) (Davis, 1989) provides the theoretical basis for learning systems by explaining how perceived usefulness and perceived ease of use influence students' acceptance of AI technologies. This dimension encompasses technological adaptation, AI-enabled learning systems, and the use of big data to enhance educational processes. Finally, the Theory of Planned Behaviour (Ajzen, 1985) supports the ethical considerations dimension by explaining how attitudes, subjective norms, and perceived behavioural control influence students' intentions to use AI responsibly. Accordingly, ethical AI, curriculum design, privacy, academic integrity, and responsible technological adaptation are central considerations. Together, these theories provide an integrated framework for examining AI adoption, research, ethics, and teaching and learning in the future of higher education.

MATERIAL AND METHODS

For this systematic literature review, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework proposed by Page et al. (2021) was adopted as the guiding methodology. PRISMA is widely recognized as a rigorous and transparent approach for conducting systematic reviews, ensuring consistency, comprehensiveness, and replicability throughout the review process. In this study, the researcher identified, evaluated, and synthesized studies relevant to the chosen research topic. To ensure broad coverage and access to high-quality scholarly publications, two major databases, Scopus and Web of Science (WoS), were selected as the primary sources for data retrieval due to their extensive indexing coverage and academic reliability.

The PRISMA methodology consists of several systematic stages designed to facilitate a comprehensive review of the literature. The process begins with the identification stage, where relevant studies are located through structured database searches. This is followed by the screening stage, during which retrieved records are examined against predetermined inclusion and exclusion criteria, and irrelevant or duplicate studies are removed. The eligibility stage involves a more detailed assessment of the remaining articles to ensure that they fully satisfy the established selection criteria. Subsequently, data abstraction and analysis are conducted to extract, organize, and synthesize key information from the selected studies. Finally, a quality appraisal stage is carried out to evaluate the methodological rigor and credibility of the included studies. By following these five interconnected stages, namely (i) identification, (ii) screening, (iii) eligibility, (iv) data abstraction and analysis, and (v) quality appraisal, the PRISMA framework enhances the transparency, validity, and reliability of the review, thereby producing findings that can effectively inform future research and practice.

Identification

Consistent with the PRISMA framework, the identification stage serves as the foundation of a systematic literature review by ensuring a comprehensive search of relevant literature while minimizing the possibility of selection bias. In this study, a systematic search strategy was conducted using two internationally recognized bibliographic databases, Scopus and Web of Science (WoS). The search employed a set of carefully selected keywords related to *academic writing*, *obstacles*, and *higher education institutions*. The complete search string used for data retrieval is presented in Table 1.

The selection of Scopus and Web of Science was based on their extensive multidisciplinary coverage, rigorous indexing standards, and inclusion of high-quality peer-reviewed publications. The search process retrieved a total of 260 records, comprising 160 records from Scopus and 100 records from Web of Science, before the removal of duplicate entries.

The larger number of studies identified from Scopus reflects its broader journal coverage, particularly within the social sciences and educational research domains, whereas Web of Science contributed a more focused collection of highly cited and methodologically robust studies.

As illustrated in Table 1, the identification of 260 records indicates the increasing scholarly interest in academic writing within higher education settings. The retrieved studies encompass a wide range of perspectives, including pedagogical, linguistic, educational, and psychological dimensions, highlighting the multidisciplinary nature of the topic. Utilizing multiple databases strengthened the comprehensiveness and methodological rigor of the review by reducing database-specific bias and ensuring the inclusion of diverse research traditions and publication sources.

Furthermore, the adoption of carefully constructed search terms enhanced the sensitivity and accuracy of the search process, enabling the capture of relevant studies despite variations in terminology across disciplines.

Overall, this systematic and transparent identification process established a robust evidence base for the subsequent stages of screening, eligibility assessment, and data synthesis, in line with the recommendations of the PRISMA guidelines for conducting rigorous and replicable systematic literature reviews.

TABLE 1: The search string.

Scopus	TITLE-ABS-KEY (("AI technology" OR "artificial intelligence" OR "machine learning" OR "deep learning" OR AI) AND ("postgraduate students" OR "graduate students" OR "master's students" OR "PhD students" OR "doctoral students") AND ("academic research" OR "scholarly research" OR "research directions" OR "research trends" OR "research focus"))
WebofScience	TITLE-ABS-KEY (("AI technology" OR "artificial intelligence" OR "machine learning" OR "deep learning" OR AI) AND ("postgraduate students" OR "graduate students" OR "master's students" OR "PhD students" OR "doctoral students") AND ("academic research" OR "scholarly research" OR "research directions" OR "research trends" OR "research focus")) Extracted Aug 2026

Screening

During the screening stage of the systematic literature review, potentially relevant studies were evaluated to ensure their alignment with the four established research questions. This phase focused on refining the initial pool of records by removing duplicates and applying predefined inclusion and exclusion criteria. Following the initial review, 260 publications were excluded for failing to meet the scope and relevance requirements of the study, leaving 59 (Scopus=33; Wos; 26) articles for further consideration, as outlined in Figure 2.

The primary inclusion criterion was the type of literature, with priority given to scholarly sources that offer substantive and empirical insights. As a result, materials such as book reviews, book series, meta-syntheses, meta-analyses, conference proceedings, and book chapters not directly related to the core focus of the review were excluded.

To ensure consistency and relevance to contemporary academic discourse, only peer-reviewed publications written in English and published between 2022 and 2026 were retained. Additionally, a duplication check led to the removal of 0 repeated record across the databases. This systematic and criteria-driven screening process enhanced the focus and quality of the evidence base, ensuring that only the most relevant and methodologically sound studies progressed to the subsequent stages of analysis.

Eligibility

For the third step, known as eligibility, a total of 59 articles were prepared. All articles' titles and key content were thoroughly reviewed at this stage to ensure that the inclusion requirements were fulfilled and fit into the present study with the current research aims. Therefore, two reports were omitted because they were not pure science articles based on empirical evidence. Finally, 59 articles are available for review (see Table 3).

TABLE 3: The selection criterion is searching

Criterion	Inclusion	Exclusion
Language	English	Non-English
Time line	2022 – 2026	< 2022

Literature type	Journal (Article)	Conference, Book, Review
Publication Stage	Final	In Press
Subject Area	AI technology,postgraduates, higher education	Besides AI technology,postgraduates, higher education

Data Abstraction and Analysis

An integrative analysis was used as one of the assessment strategies in this study to examine and synthesize a variety of research designs (quantitative, qualitative, and mixed methods). To develop themes, the authors carefully analyzed 59 publications for relevant material related to the study's topics. They examined the methodology and research results of significant studies on PIU and mental health in children.

The authors collaborated to develop themes based on the evidence presented throughout the study. They kept a log of their data analysis process to document relevant perspectives, analyses, or ideas. The authors ensured consistency in theme design by comparing the results and discussing disagreements between themselves. This expert review phase established the validity of each subtheme by ensuring clarity, importance, and suitability (Refer to Appendix 1).

Quality of Appraisal

According to Kitchenham and Charters (Kitchenham, 2007), the researchers need to assess the quality of the research chosen. The next stage is applying quality asseesment suggested by Abouzahra et al., (2020), which consitst of six questions complying to a scoring procedure for evaluating each criteria. The possible ratings are;

"Yes" (Y) with a score of 1 if the criterion is fully met, "Partly" (P) with a score of 0.5 if the criterion is somewhat met but contains some gaps or shortcomings, and "No" (N) with a score of 0 if the criterion is not met at all.

Table 3- Possible ratings for 6 questions by Abouzahra et al., (2020),

No	Question
QA1	Is the purpose of the study clearly stated?
QA2	Is the interest and the usefulness of the work clearly presented?
QA3	Is the study methodology clearly established?
QA4	Are the concepts of the approach clearly defined?
QA5	Is the work compared and measured with other similar work?
QA6	Are the limitations of the work clearly mentioned?

Each writer independently assesses the study according to these criteria, and the scores are then totalled across all experts to determine the overall mark. For a study to be accepted for the next process, the total mark, derived from summing the scores from all three experts, must exceed 3.0. This threshold ensures that only

studies meeting a certain quality standard proceed further. The results are shown in Table 4.

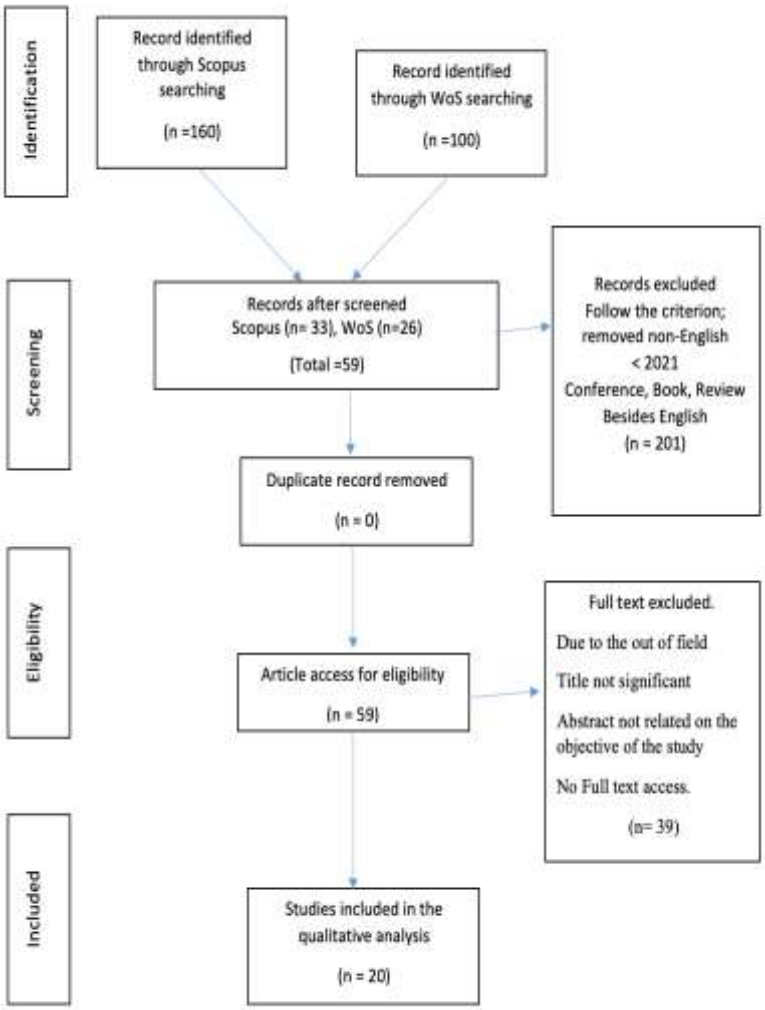

FIGURE 2. Flow diagram of the proposed searching study (Moher D, Liberati A, Tetzlaff J, 2009)

RESULT AND FINDING

Quality of Assessment

Table 4 shows the result of the assessment performance for final 20 selected primary studies. The overall quality of the articles is as follows;

- High quality (≥80%): Majority of studies
- Moderate quality (60–79%): Conceptual or descriptive studies
- Lower quality (<60%): Primarily survey-only or exploratory abstracts

PS	Author	Year	Title of Document	QA1	QA2	QA3	QA4	QA5	QA6	Total Mark	Percentage (%)
PS1	Asagar, M.S.	2026	Navigating the Future: Attitudes and Ethical Implications of AI Tools in Academic Research	Y	Y	P	P	P	P	**4.0**	**66.67%**
PS2	Kumar, S.; Gunn, A.	2025	Doctoral Students' Reflections on Generative Artificial	Y	Y	Y	P	P	P	**4.5**	**75.00%**

			Intelligence (GenAI) Use in the Literature Review Process								
PS3	Al-Shamrani, A.S.A.; Alhomayani, R.E.S.; Ibrahim, A.M.	2026	The Role of Generative Artificial Intelligence in Advancing Sustainable and Environmentally Responsible Teaching Practices Among Postgraduate Students	Y	Y	Y	Y	P	Y	**5.5**	**91.67%**
PS4	Ebrahimi, Z.; Esfandiari, M.R.; Rahimi, F.	2026	Postgraduate EFL Students' Engagement with ChatGPT in Academic Research: A Qualitative Study in Iran	Y	Y	Y	P	P	P	**4.5**	**75.00%**
PS5	Rahim, N.; Nesar, S.; Hashmi, U.P.; Rasheed, A.; Majeed, S.; Noor, B.; Zehra, A.; Naqvi, M.; Usmani, M.S.; Jamshed, S.	2026	Familiarity, Attitude and Practice of Postgraduate Health Science Students of Pakistan Regarding the Implication of Artificial Intelligence in Research: An Analytical Survey	Y	Y	Y	Y	P	Y	**5.5**	**91.67%**
PS6	Jin, S.; Cheng, J.; Zhang, A.; Lei, Z.; Liu, X.	2026	AI Literacy as Contextual Judgement: Postgraduate Researchers' Appropriateness Judgements of Generative AI Use in a Multilingual Chinese Setting	Y	Y	Y	Y	Y	Y	**6.0**	**100.00%**
PS7	Ringo, D.S.	2025	The Effect of Generative AI Use on Doctoral Students' Academic Research Progress: The Moderating Role of Hedonic Gratification	Y	Y	Y	Y	Y	Y	**6.0**	**100.00%**
PS8	Yu, X.; Hu, Y.; Hu, Y.; Li, K.	2025	Exploring Factors That Influence Graduate Students' Intention to Use Generative Artificial Intelligence in Academic Research: PLS-SEM and fsQCA Methods	Y	Y	Y	Y	Y	P	**5.5**	**91.67%**
PS9	Alvarez, G.; Cress, U.	2024	The Uses of Digital Technologies in Dissertation Writing: Perspectives of Argentine Graduate Students in Social Sciences and Humanities	Y	Y	Y	P	P	Y	**4.5**	**75.00%**
PS10	de Jesus, L.F.	2026	AI-Assisted Research Writing: Graduate Students' Experiences, Outcomes and Academic Integrity	Y	Y	Y	Y	P	P	**5.0**	**83.33%**
PS11	Zhu, G.; Pan, F.; Sui, W.	2026	The Effect of Informal Academic Support on Innovation Capability of Postgraduate Students in the Context of Digital Transformation: Multiple Mediating Effects of Psychological Capital and Learning Engagement	Y	Y	Y	Y	Y	P	**5.5**	**91.67%**
PS12	Zhang, J.; Pan, W.; Liang, X.; Ge, J.	2025	Development and Validation of the ICAP GenAI Scale to Measure How Graduate Students Integrate Generative AI Into Academic Research	Y	Y	Y	Y	Y	Y	**6.0**	**100.00%**
PS13	Hu, Y.; Yu, X.; Hu, Y.; Li, K.	2025	Determinants of Continuance Intention to Use GAI in Academic Research Among	Y	Y	Y	Y	Y	P	**5.5**	**91.67%**

			Graduate Students: Findings from PLS-SEM and fsQCA								
PS14	Koltovskaia, S.; Rahmati, P.; Saeli, H.	2024	Graduate Students' Use of ChatGPT for Academic Text Revision: Behavioral, Cognitive, and Affective Engagement	Y	Y	Y	Y	Y	P	**5.5**	**91.67%**
PS15	Avdiu-Kryeziu, S.; Kryeziu, V.	2026	Students' Use of Artificial Intelligence in Academic Research: Benefits, Challenges, and Academic Integrity	Y	Y	Y	P	P	P	**4.0**	**66.67%**
PS16	Alenezi, A.	2024	The Effect of Emotional Intelligence on Higher Education: A Pilot Study on the Interplay Between Artificial Intelligence, Emotional Intelligence, and E-Learning	Y	Y	P	P	P	P	**3.5**	**58.33%**
PS17	Wu, Z.J.	2026	Evaluating the Impact of AI Tools on Academic Performance and Student Satisfaction	Y	Y	Y	P	P	P	**4.5**	**75.00%**
PS18	Marín, Y.R.; Caro, O.C.; Rubio, Y.D.M.; Tuesta, J.N.A.; Bardales, E.S.; Rituay, A.M.C.; Santos, R.C.	2025	Artificial Intelligence as a Teaching Tool in University Education	Y	Y	Y	Y	P	P	**5.0**	**83.33%**
PS19	Porwal, S.; Shabbir, N.	2026	Artificial Intelligence and Digitalization in Higher Education: Enhancing Doctoral Research Productivity in Indian Universities	Y	Y	P	P	P	P	**4.0**	**66.67%**
PS20	Tovmasyan, G.	2025	Higher Education in Armenia Adopting AI and Digital Technologies: Students' Experiences and Perspectives	Y	Y	Y	P	P	P	**4.5**	**75.00%**

The quality assessment of the 20 selected studies shows an overall moderate to high level of methodological and reporting quality, with scores ranging from 3.5/6 (58.33%) to 6.0/6 (100%)**.** Three studies- Jin et al. (2026), Ringo (2025), and Zhang et al. (2025**)**, achieved the highest possible score of 6.0 (100%)**,** indicating that all six quality criteria were fully satisfied. Eight additional studies obtained **5**.5/6 (91.67%)**,** demonstrating strong quality with only minor shortcomings, particularly in comparison with similar studies or explicit reporting of limitations. The majority of papers clearly stated their purpose (QA1) and usefulness or research significance (QA2), while methodology (QA3) and conceptual clarity (QA4) were also generally well established. However, QA5 (comparison with similar work) and QA6 (limitations) were the most frequently rated as partially satisfied, suggesting that these aspects were less consistently reported. The lowest score was recorded for Alenezi (2024) at 3.5/6 (58.33%)**,** while Asagar (2026), Avdiu-Kryeziu and Kryeziu (2026), and Porwal and Shabbir (2026) each scored 4.0/6 (66.67%)**.** Overall, the findings indicate that the selected literature demonstrates acceptable to excellent quality, with opportunities for stronger comparative analysis and clearer discussion of study limitations.

Themes

Table 5- Analysis for Themes

Theme	Number of Articles	Percentage of Studies
Theme 1: AI Adoption	4	20%
Theme 2: AI-Assisted Academic Research	7	35%

Theme 3: AI Ethics	4	20%
Theme 4: AI-Enabled Teaching & Learning	5	25%
Total	20	100%

The table presents the distribution of 20 studies across four major themes related to artificial intelligence (AI). The largest proportion of studies, 35% (7 articles), focuses on Theme 2: AI-Assisted Academic Research**,** indicating that this area receives the greatest attention among the studies reviewed. This is followed by Theme 4: AI-Enabled Teaching and Learning, which accounts for 25% (5 articles), highlighting the growing interest in the use of AI to support and transform educational practices. Theme 1: AI Adoption and Theme 3: AI Ethics each comprise 20% of the studies, with 4 articles devoted to each theme. The equal representation of these two themes suggests that researchers are examining both the adoption of AI technologies and the ethical considerations associated with their use. Overall, the distribution demonstrates a broad research focus, covering technological adoption, academic research, ethical issues, and educational applications. However, the higher proportion of studies on AI-assisted academic research suggests that this area is currently the most prominent focus within the selected literature, while the other themes provide complementary perspectives on AI's role in education and research.These four themes are then used to answer the research questions planned for this SLR.

Theme 1: AI Adoption

This section presents the analysis of data to answer research question 1: What factors influence the adoption, acceptance, and continued use of artificial intelligence and generative AI among students and researchers in higher education?

PS	Author(s)	Year	Title of Article	Main Focus
PS5	Rahim, N.; Nesar, S.; Hashmi, U.P.; Rasheed, A.; Majeed, S.; Noor, B.; Zehra, A.; Naqvi, M.; Usmani, M.S.; Jamshed, S.	2026	Familiarity, Attitude and Practice of Postgraduate Health Science Students of Pakistan Regarding the Implication of Artificial Intelligence in Research: An Analytical Survey	Familiarity, attitudes, practices, perceived usefulness and training needs
PS8	Yu, X.; Hu, Y.; Hu, Y.; Li, K.	2025	Exploring Factors That Influence Graduate Students' Intention to Use Generative Artificial Intelligence in Academic Research: PLS-SEM and fsQCA Methods	Factors influencing GAI adoption intention
PS13	Hu, Y.; Yu, X.; Hu, Y.; Li, K.	2025	Determinants of Continuance Intention to Use GAI in Academic Research Among Graduate Students: Findings from PLS-SEM and fsQCA	Determinants of continued GAI use
PS20	Tovmasyan, G.	2025	Higher Education in Armenia Adopting AI and Digital Technologies: Students' Experiences and Perspectives	Student experiences, satisfaction and adoption of AI/digital technologies

The table presents four selected studies (PS5, PS8, PS13, and PS20) examining the use, adoption, and implications of artificial intelligence (AI) and generative artificial intelligence (GAI) in higher education and academic research. The studies were published between 2025 and 2026, indicating that this is a recent and rapidly developing area of research. PS5, by Rahim et al. (2026), focuses on postgraduate health science students in Pakistan, particularly their familiarity, attitudes, practices, perceived usefulness, and training needs regarding AI in research. PS8, by Yu et al. (2025), investigates the factors influencing graduate students' intention to adopt GAI for academic research, while PS13, by Hu et al. (2025), examines the determinants of students' continued intention to use GAI in academic research. Both studies employ

analytical approaches to understand the behavioural factors associated with GAI adoption and sustained use. Finally, PS20, by Tovmasyan (2025), explores students' experiences, satisfaction, and perspectives regarding the adoption of AI and digital technologies in higher education in Armenia. Overall, the table demonstrates a strong emphasis on students' perceptions, adoption intentions, experiences, and continued use of AI technologies.

4.2.2 Theme 2: AI-Assisted Academic Research

This section presents the analysis of data to answer research question 2: How are artificial intelligence and generative AI tools being used to support academic research and writing?

PS	Author(s)	Year	Title of Article	Main Focus
PS2	Kumar, S.; Gunn, A.	2025	Doctoral Students' Reflections on Generative Artificial Intelligence (GenAI) Use in the Literature Review Process	GenAI-supported literature reviews
PS4	Ebrahimi, Z.; Esfandiari, M.R.; Rahimi, F.	2026	Postgraduate EFL Students' Engagement with ChatGPT in Academic Research: A Qualitative Study in Iran	ChatGPT use in academic research and research proficiency
PS7	Ringo, D.S.	2025	The Effect of Generative AI Use on Doctoral Students' Academic Research Progress: The Moderating Role of Hedonic Gratification	ChatGPT use and doctoral research progress
PS9	Alvarez, G.; Cress, U.	2024	The Uses of Digital Technologies in Dissertation Writing: Perspectives of Argentine Graduate Students in Social Sciences and Humanities	Digital technologies in dissertation writing
PS10	de Jesus, L.F.	2026	AI-Assisted Research Writing: Graduate Students' Experiences, Outcomes and Academic Integrity	AI-assisted thesis writing and writing outcomes
PS14	Koltovskaia, S.; Rahmati, P.; Saeli, H.	2024	Graduate Students' Use of ChatGPT for Academic Text Revision: Behavioral, Cognitive, and Affective Engagement	ChatGPT-supported academic text revision
PS19	Porwal, S.; Shabbir, N.	2026	Artificial Intelligence and Digitalization in Higher Education: Enhancing Doctoral Research Productivity in Indian Universities	AI tools for writing, literature review, data analysis, references and research productivity

The table presents seven studies (PS2, PS4, PS7, PS9, PS10, PS14, and PS19) examining the role of artificial intelligence (AI), particularly generative AI and ChatGPT, in supporting postgraduate and doctoral-level academic research. Published between 2024 and 2026, the studies focus on diverse aspects of research practice, including literature reviews, academic writing, text revision, dissertation development, and overall research productivity. PS2 explores doctoral students' reflections on using GenAI during the literature review process, while PS4 examines postgraduate EFL students' engagement with ChatGPT and its relationship to research proficiency. PS7 investigates the effect of GenAI use on doctoral students' research progress, including the moderating role of hedonic gratification. PS9 broadens the perspective by examining digital technologies used in dissertation writing among Argentine graduate students. Meanwhile, PS10 focuses specifically on AI-assisted research writing, considering students' experiences, outcomes, and academic integrity. PS14 examines behavioural, cognitive, and affective engagement with ChatGPT for academic text revision, whereas PS19 highlights the contribution of AI and digitalisation to doctoral research productivity

through writing, literature review, data analysis, and referencing. Overall, the studies demonstrate the expanding role of AI across multiple stages of postgraduate research.

Theme 3: AI Ethics

This section presents the analysis of data to answer research question 3: What ethical issues, risks, challenges, and responsible-use practices are associated with the integration of artificial intelligence and generative AI in higher education and academic research?

PS	Author(s)	Year	Title of Article	Main Focus
PS1	Asagar, M.S.	2026	Navigating the Future: Attitudes and Ethical Implications of AI Tools in Academic Research	AI awareness, ethical concerns, data ownership and algorithmic bias
PS6	Jin, S.; Cheng, J.; Zhang, A.; Lei, Z.; Liu, X.	2026	AI Literacy as Contextual Judgement: Postgraduate Researchers' Appropriateness Judgements of Generative AI Use in a Multilingual Chinese Setting	AI literacy, ethical awareness and contextual judgement
PS12	Zhang, J.; Pan, W.; Liang, X.; Ge, J.	2025	Development and Validation of the ICAP GenAI Scale to Measure How Graduate Students Integrate Generative AI Into Academic Research	Cognitive engagement and measurement of GenAI integration
PS15	Avdiu-Kryeziu, S.; Kryeziu, V.	2026	Students' Use of Artificial Intelligence in Academic Research: Benefits, Challenges, and Academic Integrity	AI use, academic integrity and ethical issues

The table presents four studies (PS1, PS6, PS12, and PS15) that examine ethical, cognitive, and responsible dimensions of artificial intelligence (AI) use in academic research. Published between 2025 and 2026, the studies reflect growing scholarly attention to the challenges associated with integrating AI into postgraduate research. PS1 by Asagar (2026) explores researchers' attitudes toward AI tools, with particular emphasis on ethical concerns, data ownership, and algorithmic bias. PS6 by Jin et al. (2026) focuses on AI literacy among postgraduate researchers and examines how they make contextual judgements about the appropriate use of generative AI in a multilingual Chinese setting, highlighting the importance of ethical awareness and informed decision-making. PS12 by Zhang et al. (2025) takes a measurement-oriented approach through the development and validation of the ICAP GenAI Scale, which assesses how graduate students cognitively engage with and integrate GenAI into academic research. Finally, PS15 by Avdiu-Kryeziu and Kryeziu (2026) investigates the benefits and challenges of AI use while emphasizing academic integrity and ethical considerations. Overall, the studies demonstrate that effective AI integration requires not only technical competence but also ethical awareness, critical judgement, and responsible research practices.

Theme 4: AI-Enabled Teaching & Learning

This section presents the analysis of data to answer research question 4: How does the integration of artificial intelligence and generative AI influence teaching, learning, academic performance, student engagement, and educational practices in higher education?

PS	Author(s)	Year	Title of Article	Main Focus
PS3	Al-Shamrani, A.S.A.; Alhomayani, R.E.S.; Ibrahim, A.M.	2026	The Role of Generative Artificial Intelligence in Advancing Sustainable and Environmentally Responsible Teaching Practices Among Postgraduate Students	GAI-supported sustainable teaching
PS11	Zhu, G.; Pan, F.; Sui, W.	2026	The Effect of Informal Academic Support on Innovation Capability of Postgraduate	Digital transformation,

			Students in the Context of Digital Transformation: Multiple Mediating Effects of Psychological Capital and Learning Engagement	academic support and innovation capability
PS16	Alenezi, A.	2024	The Effect of Emotional Intelligence on Higher Education: A Pilot Study on the Interplay Between Artificial Intelligence, Emotional Intelligence, and E-Learning	AI, emotional intelligence and e-learning
PS17	Wu, Z.J.	2026	Evaluating the Impact of AI Tools on Academic Performance and Student Satisfaction	AI-supported learning, academic performance and satisfaction
PS18	Marín, Y.R.; Caro, O.C.; Rubio, Y.D.M.; Tuesta, J.N.A.; Bardales, E.S.; Rituay, A.M.C.; Santos, R.C.	2025	Artificial Intelligence as a Teaching Tool in University Education	AI in teaching, learning perceptions, privacy and training needs

The table presents five studies (PS3, PS11, PS16, PS17, and PS18) examining the role of artificial intelligence (AI) and digital technologies in teaching and learning within higher education. Published between 2024 and 2026, the studies address diverse dimensions of AI-supported education, including sustainable teaching practices, digital transformation, emotional intelligence, academic performance, student satisfaction, and perceptions of AI as a teaching tool. PS3 focuses on the use of generative AI to support sustainable and environmentally responsible teaching practices among postgraduate students, highlighting AI's potential contribution to educational sustainability. PS11 examines how informal academic support, psychological capital, and learning engagement influence postgraduate students' innovation capability within digitally transforming educational environments. PS16 explores the relationship between AI, emotional intelligence, and e-learning, emphasizing the interaction between technological and human factors in higher education. PS17 evaluates the impact of AI tools on students' academic performance and satisfaction, providing insights into learning outcomes and student experiences. Finally, PS18 investigates AI as a teaching tool in university education, particularly students' perceptions, privacy concerns, and training needs. Overall, these studies demonstrate the growing potential of AI to enhance teaching, learning, innovation, and student experiences while emphasizing the need for appropriate support, training, and responsible implementation.

CONCLUSION

The discussion of the conclusion is presented through the summary of findings and implications and suggestions for future research.

SUMMARY OF FINDINGS

The systematic literature review demonstrates that artificial intelligence (AI) is becoming an increasingly important component of higher education, with the 20 selected studies organised into four themes: AI adoption (20%), AI-assisted academic research (35%), AI ethics (20%), and AI-enabled teaching and learning (25%). The findings indicate that AI-assisted academic research is the most prominent area, with studies highlighting applications in literature reviews, academic writing, text revision, data analysis, referencing, and research productivity. These findings are consistent with Kumar and Gunn (2025), Ebrahimi et al. (2026), Koltovskaia et al. (2024), and Porwal and Shabbir (2026), who demonstrate the expanding role of GenAI and ChatGPT across different stages of postgraduate research. Adoption studies by Rahim et al. (2026), Yu et al. (2025), Hu et al. (2025), and Tovmasyan (2025) further emphasise familiarity, perceived usefulness, intention, satisfaction, and continued use as important considerations. Meanwhile, Asagar (2026), Jin et al. (2026), and Avdiu-Kryeziu and Kryeziu (2026) highlight ethical awareness, academic integrity, bias, privacy, and sponsible AI use.

Implications and Suggestions for Future Research

The study has important implications for universities, educators, students, and policymakers. AI should be integrated as a supportive technology that enhances research productivity, personalised learning, teaching practices, and student engagement while maintaining human judgement and academic responsibility. Universities should therefore develop clear AI-use policies, strengthen AI literacy and ethical training, and provide guidance on academic integrity, privacy, bias, and appropriate use. Future research should examine AI adoption across larger and more diverse student populations, investigate longitudinal patterns of continued AI use, and compare experiences across disciplines, institutions, and cultural contexts. Further empirical research is also needed to evaluate the long-term effects of AI on academic performance, critical thinking, self-regulated learning, research quality, and student engagement. Greater attention should be given to responsible AI frameworks and the development of reliable measures for AI literacy and ethical judgement. These directions would strengthen the evidence base for sustainable and responsible AI integration in higher education.

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