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Review Article

Ai literacy and academic integrity in a globalised educational system: A systematic review.

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ABSTRACT

The rapid integration of AI in higher education has revolutionized teaching, evaluation, and learning mechanisms, but at the same time, there are global concerns about the AI-related threats to academic integrity. Background: The increased usage of generative AI in higher education has further fueled the debate on the application of good AI practices and the need for AI literacy to ensure academic integrity in various educational settings. Objective: This systematic review was conducted to identify the definition of AI literacy and its association with AI-related integrity challenges in higher education settings. Methods: The qualitative thematic synthesis was conducted on 29 peer-reviewed articles (2015 to 2025) following the guidelines of the PRISMA 2020 protocol, utilizing literature from prominent scholarly databases. Results: The results of the systematic review indicate that there are various definitions of AI literacy in various settings, and there is no unified definition of AI literacy in learning settings. The results further indicate that there are various AI-related threats to academic integrity in various settings, and the usage of ChatGPT is on the rise, leading to plagiarism and authorship issues in various settings. Regional analysis: The results indicate that there are more studies in the Global North compared to the Global South. Conclusion: The results indicate that there is an association between AI literacy and AI-related integrity challenges in various settings. Implications for future research: The results of the systematic review indicate the need for further research to investigate the effect of AI literacy on good AI practices in various settings.

Keywords: *Artificial intelligence; AI literacy; Academic integrity; Higher education; Globalization.*
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INTRODUCTION

Significantly, the accelerated assimilation of artificial intelligence (AI) technology in education systems around the world has profoundly influenced learning and teaching methodologies at large, thereby offering tremendous opportunities in terms of learning support and assessments (Heffernan & Heffernan, 2014; Holmes & Tuomi, 2022; Chen, Chen, & Lin, 2020). The use of generative AI technology like ChatGPT is becoming more common in assisting students in preparing their essays and assignments, thereby generating new ideas and improving learning outcomes. However, at the same time, new challenges in terms of academic integrity are being reported (Dwivedi et al., 2023; Kasneci et al., 2023; Baidoo-Anu & Ansah, 2023). On the other hand, globalization in education has provided tremendous opportunities in terms of learning from different regions around the world and thereby expanding learning horizons. However, at the same time, it has become more difficult to maintain academic integrity in different contexts (Williamson & Eynon, 2020; Bond, Zawacki-Richter, & Nichols, 2024). The concept of AI literacy—i.e., the knowledge and skills required to use AI technology—has come to be regarded as a crucial learning requirement in terms of learning support and assessments (Long & Magerko, 2020; Ng, Leung, Chu, & Qiao, 2021; Laupichler, Aster, Schirch, & Raupach, 2022). The concept of academic integrity—i.e., honesty and fairness in learning—remains a crucial requirement in the context of learning support and assessments (Eaton, 2023; Bretag et al., 2019; Cotton, Cotton, & Shipway, 2023).

However, these technological developments and applications of AI in education are also creating tension with regard to its potential for facilitating dishonest academic behavior such as plagiarism, contract cheating, and unethical collaboration (Curtis & Clare, 2017; Rahman et al., 2023; Rudolph et al., 2023). Even though some research highlights AI's potential for facilitating critical thinking and increasing the efficiency of learning and critical thinking (Chen et al., 2022; Lim et al., 2023), some research suggests that a lack of AI literacy results in ethical breaches and decreased integrity of academic work (Su et al., 2022; Zawacki-Richter et al., 2019). The literature on this issue is dispersed and inconsistent, and it is spread across various disciplines and methodologies, and regional contexts, and there is no agreement on appropriate strategies to promote AI literacy and maintain academic integrity (Holmes, Porayska-Pomsta, Holstein, et al., 2021; Zhai et al., 2021).

In recognition of the piecemeal nature of existing research, there is a need to conduct a systematic review of research on the topic of AI literacy and academic integrity in globalized education systems. This review is designed to synthesize peer-reviewed research on the application of AI, education, and ethics to understand the link between AI literacy and academic integrity (Floridi, 2018; Popenici & Kerr, 2017; Selwyn, 2019). In this context, the objective of this systematic review is to critically evaluate and synthesize the peer-reviewed literature on the concept of AI literacy and its

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link with academic integrity in higher education systems, with specific attention to (a) definitions of AI literacy, (b) emerging trends in academic integrity linked to the application of AI technologies, and (c) emerging trends in addressing these issues through pedagogical and policy interventions. This will allow educators and education systems to leverage the full potential of AI in an ethical manner while taking into consideration the diversity of various education systems (Spector, 2022; Holmes & Tuomi, 2022).

THEORETICAL FRAMEWORK

AI Literacy Theory

AI literacy builds upon the existing digital literacy and data literacy constructs to include knowledge, skills, and ethical competencies that allow students to engage in a productive fashion with artificial intelligence in learning contexts (Long & Magerko, 2020; Ng, Leung, Chu, & Qiao, 2021). This theoretical framework highlights not only students' knowledge of artificial intelligence algorithms and outputs but also ethical competencies in relation to the critical analysis and responsible use of artificial intelligence in learning contexts (Su, Ng, & Zhang, 2022; Laupichler, Aster, Schirch, & Raupach, 2022). Foundational theories of artificial intelligence literacy suggest that there are three primary aspects: students' knowledge of artificial intelligence systems, students' skills in relation to artificial intelligence system use in learning contexts, and ethical competencies in relation to artificial intelligence use in learning contexts (Long & Magerko, 2020; Ng et al., 2021). In learning contexts at the higher education level, artificial intelligence literacy enables students to use learning platforms that can adapt to students' learning requirements and generative artificial intelligence systems in learning contexts, thereby avoiding misinterpretation of artificial intelligence outputs (Kasneci et al., 2023; Chen, Xie, & Hwang, 2022). Academic Integrity Theory

Academic Integrity Theory

The theory of academic integrity provides a values-driven approach, which guides ethical behaviors in academic environments, promoting values of honesty, trust, fairness, and accountability (Bretag et al., 2019; Eaton, 2023; Cotton, Cotton, & Shipway, 2023). From this theory, integrity is understood not only from an individual perspective, where personal integrity is important, but also from an institutional level, where policies, assessments, and technological capabilities play a role. For example, the theory of contract cheating provides an understanding of how a combination of opportunity, motivation, and lack of understanding can contribute to academic dishonesty (Curtis & Clare, 2017; Bretag et al., 2019). However, the advent of AI tools, for example, ChatGPT, presents a challenge, which may tempt individuals to be dishonest or may result in unintentional academic dishonesty or a lack of understanding (Rahman, Watanobe, & Nakamura, 2023; Rudolph, Tan, & Tan, 2023). AI literacy, thus, becomes a fundamental part of academic integrity, which acts as a conduit for promoting academic integrity, particularly in relation to AI (Su et al., 2022; Zawacki-Richter, Marín, Bond, & Gouverneur, 2019).

Globalization and Education Theory

Thus, globalisation, along with theory in education, provides a broader understanding of the role of learning in a global world. Globalisation highlights the role of cross-border education, internationalisation, and virtual learning platforms, which significantly shape access, expectations, and values in higher education (Williamson & Eynon, 2020; Bond et al., 2024; Holmes & Tuomi, 2022). In this understanding, academic integrity becomes a global issue, where students and teachers work in a diverse cultural landscape where values may vary (Selwyn, 2019; Holmes, Porayska-Pomsta, Holstein, et al., 2021). A global world of knowledge production requires not only technological expertise but also the ability to work within a cross-cultural ethical landscape and ensure consistency in learning and assessment.

Conceptual Linkage

Integrating the different theoretical perspectives discussed above, AI literacy emerges as a mediator in the relationship between AI engagement and academic integrity. Learners who lack adequate AI literacy skills are more likely to engage in unethical behavior when using generative AI technology, leading to academic integrity violations such as plagiarism or contract cheating (Baidoo-Anu & Ansah, 2023; Dwivedi et al., 2023). Conversely, students who exhibit high levels of AI literacy skills can engage in ethical behavior when using AI technology to improve their learning experiences in a positive and ethical manner (Su et al., 2022; Chen et al., 2020; Laupichler et al., 2022). The systematic review draws from the framework discussed above in terms of analyzing the development of AI literacy in relation to ethical engagement in a globalized education system.

Research Questions

In this context, the rapid incorporation of AI in higher educational institutions has led to increased academic inquiry into AI literacy and integrity in higher educational institutions. Available literature suggests varying definitions of AI literacy, including technical, ethical, and critical aspects of AI literacy in higher educational institutions (Long & Magerko, 2020; Ng et al., 2021; Su et al., 2022). In this context, literature suggests substantial integrity challenges in higher educational institutions with regard to generative AI technology and AI literacy, including plagiarism, ghostwriting, and ambiguous AI authorship in higher educational institutions (Baidoo-Anu & Ansah, 2023; Cotton et al., 2023; Rudolph et al., 2023). Available literature on AI in higher educational institutions suggests

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varying definitions of AI literacy and integrity challenges in higher educational institutions, while also demonstrating fragmented and mixed evidence on the relationships and interplay of AI literacy and integrity in higher educational institutions (Bond et al., 2024; Zawacki-Richter et al., 2019). In this context, the following research questions guide this literature review on AI literacy and integrity in higher educational institutions: *What is the definition and conceptualization of AI literacy in higher educational institutions? What is the relationship and interplay of AI and integrity in higher educational institutions? & What are the integrity challenges and strategies in higher educational institutions in a globalized AI technology context?*

RESEARCH METHODOLOGY

Registration and Protocol Information

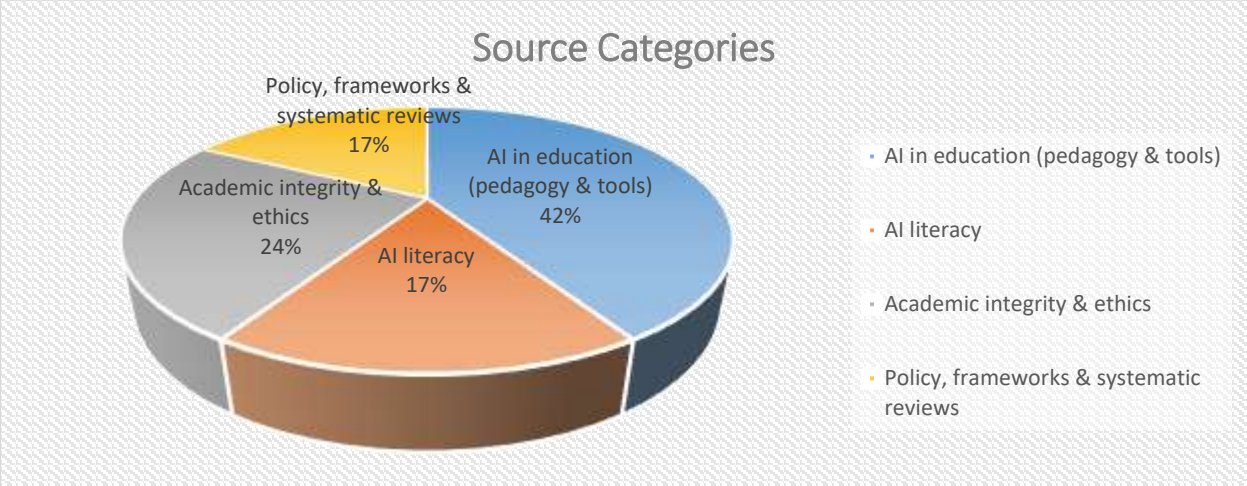
This systematic review was not formally registered in any database of systematic review registrations. An internal detailed review protocol was created to ensure the systematic processes of the search strategy, selection, data extraction, and synthesis.

The current study undertook a systematic review methodology in accordance with the PRISMA 2020 standards in order to ensure transparency and rigor in conducting the systematic review process (Page et al., 2021; Moher, Liberati, Tetzlaff, & Altman, 2009). The systematic review methodology is considered appropriate when conducting a synthesis of a large volume of studies in the field, allowing for a systematic and transparent process in the synthesis of knowledge (Bond, Zawacki-Richter, & Nichols, 2024; Zawacki-Richter, Marín, Bond, & Gouverneur, 2019). The systematic review methodology was undertaken in order to reduce bias and improve the reliability of the current review in terms of synthesizing knowledge in relation to the relationship between AI literacy and academic integrity in a globalized world (Holmes & Tuomi, 2022; Su, Ng, & Zhang, 2022).

Data Sources and Sampling Strategy

The sampling unit of this literature review comprises 29 peer-reviewed studies that discuss AI in education, AI literacy, academic integrity, and other related education and policy frameworks (Chen, Chen, & Lin, 2020; Baidoo-Anu & Ansah, 2023). To ensure a wide and global perspective, literature search results were obtained through various electronic sources, including Scopus, Web of Science, ERIC, and Google Scholar search engines (Dwivedi et al., 2023; Kasneci et al., 2023). Purposive sampling was used to choose literature that met predetermined requirements, including: (1) AI in higher education, (2) AI literacy or academic integrity, (3) use of empirical or conceptual methods, (4) peer-reviewed sources, and (5) sources published between 2015 and 2025. Sources were excluded if they were not academic sources, policy sources, editorials, or did not directly discuss AI, education, or academic integrity (Bretag et al., 2019; Ng et al., 2021). This method ensured that a literature review with a global perspective focused on rigorous and relevant literature while maintaining a global perspective (Williamson & Eynon, 2020; Bond et al., 2024).

CHART 1: Source Categories Counts (n = 29)



Study Selection and Data Collection

A six-step systematic process was used to carry out the review process. The first step involved the development of a group of keywords, including "AI literacy," "generative AI," "academic integrity," "ChatGPT in education," and "educational technology" (Su et al., 2022; Laupichler et al., 2022). The second step involved comprehensive searches of the identified databases. The third step involved the removal of duplicates, while the fourth step involved title and abstract screening according to the inclusion and exclusion

criteria (Chen et al., 2020; Baidoo-Anu & Ansah, 2023). Two researchers were used for the screening process to ensure consistency. The fifth step involved the screening of the full texts, with emphasis placed on the study of AI literacy or integrity concerns within the context of higher education (Cotton, Cotton, & Shipway, 2023; Rahman, Watanobe, & Nakamura, 2023). The final step involved the inclusion of studies that met the inclusion criteria, resulting in a total of 29 studies (Bond et al., 2024; Zawacki-Richter et al., 2019). This was done by employing a PRISMA diagram, which ensured the reproducibility of the study (Page et al., 2021).

Data Analysis

Qualitative thematic synthesis was employed as a means of analyzing the included studies (Holmes, Porayska-Pomsta, Holstein, et al., 2021; Su et al., 2022). This process involves coding the results of included studies, thus developing thematic categories such as conceptualization of AI literacy, integrity risks with AI, pedagogical approaches to AI, and policy approaches to AI within higher educational settings (Chen, Xie, & Hwang, 2022; Kasneci et al., 2023; Lim et al., 2023). Where necessary, descriptive statistics such as publication year, country, and methodology were extracted to contextualize trends within the literature (Zhai et al., 2021; Holmes & Tuomi, 2022). This process provided an integrated approach to how AI literacy integrates with integrity within global educational systems.

Risk of Bias Assessment

A quality appraisal was carried out to assess the methodologies used and strengthen the reliability of the synthesized findings. Conceptual and review articles were reviewed for the strength of their theoretical arguments and their relevance to the research questions, while empirical studies were reviewed for their methodologies and the validity of their findings. This is a standard procedure in systematic reviews in education research, as mixed methodologies are often used in such studies (Bond et al., 2024; Zawacki-Richter et al., 2019).

Ethical Considerations

However, since the research is based solely on secondary sources, there were no human subjects involved. All the sources were publicly available and peer-reviewed, hence adhering to the intellectual property rights of authors and creators (Baidoo-Anu & Ansah, 2023; Dwivedi et al., 2023). Proper referencing was followed to avoid any case of plagiarism. Moreover, transparency was ensured by clearly stating the criteria for exclusion and inclusion and by using the PRISMA model (Moher et al., 2009; Page et al., 2021). This method adheres to the ethical standards of research and makes the results reliable and reproducible (Holmes & Tuomi, 2022; Su et al., 2022).

Eligibility Criteria

The literature review includes 29 peer-reviewed articles that address the topics of AI in education, AI literacy, academic integrity, and other relevant education and policy frameworks (Chen, Chen, & Lin, 2020; Baidoo-Anu & Ansah, 2023). The inclusion criteria were tailored to ensure methodological consistency and relevance by the following criteria: (1) peer-reviewed articles or conference papers, (2) studies within the context of higher education, (3) studies on the topics of artificial intelligence, AI literacy, or academic integrity, (4) articles published in English, (5) studies employing empirical, conceptual, or review methods, and (6) articles published between 2015 and 2025. The exclusion criteria include articles that are not peer-reviewed publications, editorials, opinion pieces, book reviews, policy briefs without employing empirical or conceptual methods, and articles without direct relevance to the use of AI, AI literacy, or academic integrity within the context of higher education (Bretag et al., 2019; Ng et al., 2021). This method ensures a globally focused literature review with an emphasis on pertinent scholarship while maintaining a global perspective (Williamson & Eynon, 2020; Bond et al., 2024).

Information Sources and Search Strategy

To achieve a globally focused literature review with an emphasis on pertinent scholarship, the literature search was conducted using multiple electronic databases, including Scopus, Web of Science, ERIC, and Google Scholar. The literature search was tailored to each database's specific requirements to ensure the use of relevant keywords and Boolean search terms, such as "AI literacy" OR "Artificial Intelligence Literacy" AND "academic integrity" OR plagiarism OR "contract cheating" AND "higher education" OR "university" OR "tertiary education" AND "generative AI" OR ChatGPT OR "AI tools in education." The literature search was completed in January 2025 to include the latest literature on the topics of generative AI within the context of education.

RESEARCH FINDINGS

This systematic review is based on 29 peer-reviewed articles on artificial intelligence in education, AI literacy, and academic integrity, all of which were conducted in the context of higher education (Baidoo-Anu & Ansah, 2023; Bond et al., 2024; Zawacki-Richter et al., 2019). The literature includes conceptual studies, research investigations, and review articles on the implications of AI technologies, especially generative AI tools like ChatGPT (Kasneci et al., 2023; Dwivedi et al., 2023). The findings are presented under five thematic areas: publication trends, conceptualizations of AI literacy, AI and academic integrity, pedagogical implications, and regional trends.

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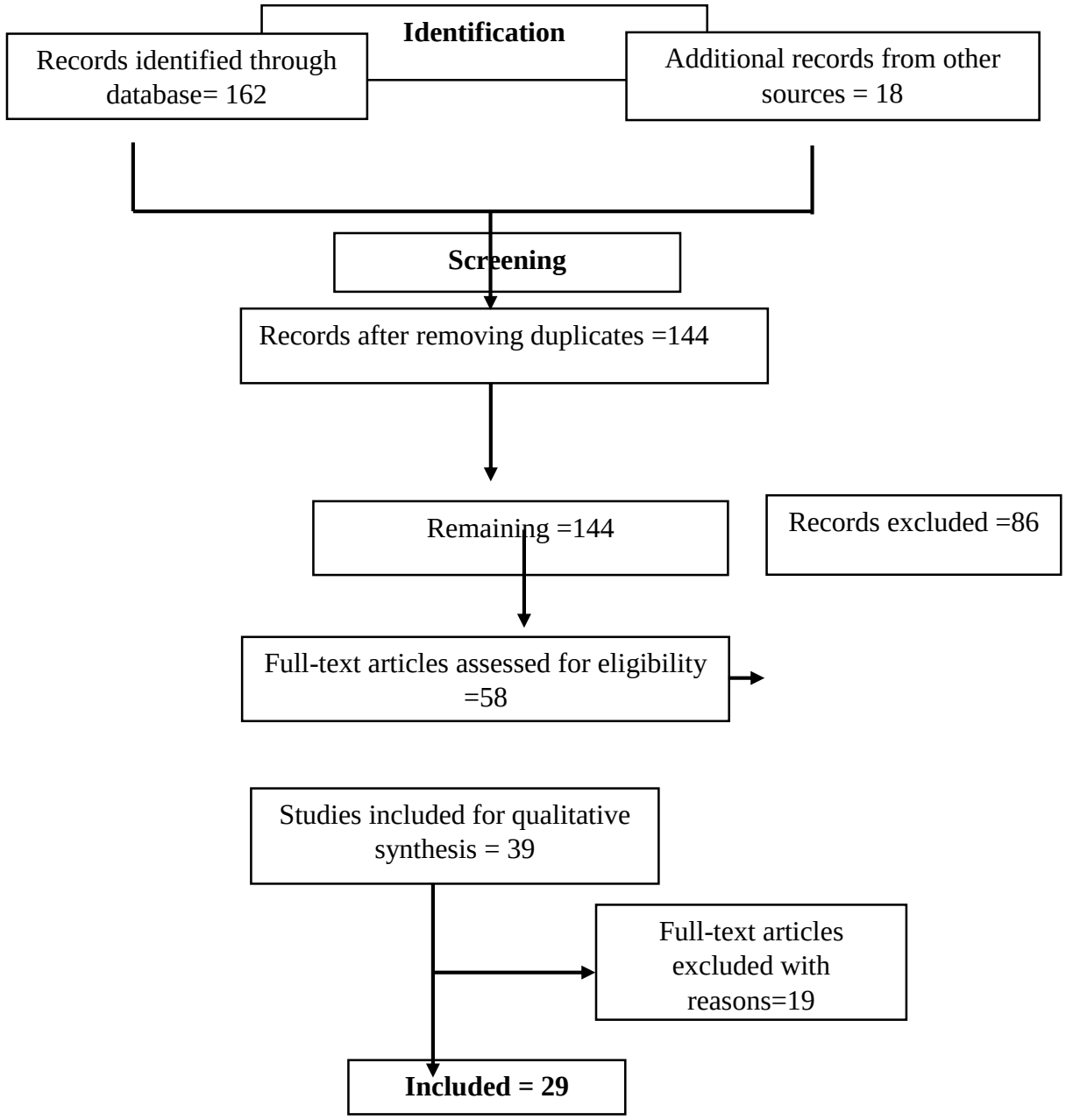
PRISMA flowchart for study selection



Initially, the literature search resulted in 162 literature records from the four databases, with 18 additional records identified through the screening of the reference lists. Following the removal of duplicate records, 140 records remained to be screened based on their titles and abstracts. Out of the 140 records, 86 were excluded based on their irrelevance to the research topic. Fifty-four records were assessed based on their full texts, with 15 records excluded because of the lack of emphasis on the importance of AI literacy, academic integrity, and higher educational contexts. Therefore, a total of 29 records were included in the qualitative synthesis.

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TABLE 1: Characteristics of Included Studies

Author (Year)	Country	Main Focus	Design	Key Contribution
Baidoo-Anu &Ansah (2023)	Ghana	Conceptual	ChatGPT in Education	Discusses the opportunities and risks associated with the use of generative artificial intelligence in the field of education.
Bond et al. (2024)	Germany	Meta-Review	Artificial Intelligence in Higher Education Research	Emphasizes the need to develop a more robust ethical framework in artificial intelligence research.
Bretag et al. (2019)	Australia	Empirical	Contract Cheating	Reveals the extent of contract cheating in the student population of a specific university.
Chen et al. (2020)	China/Global	Review	Artificial Intelligence in Education	Demonstrates the application of artificial intelligence technology in the teaching-learning process.
Chen et al. (2022)	Taiwan	Empirical	Artificial Intelligence-Assisted Personalized Learning	Demonstrates the application of artificial intelligence technology in the teaching-learning process.
Cotton et al. (2023)	United Kingdom	Conceptual	ChatGPT in Maintaining Academic Integrity	Emphasizes the need to redesign the assessment strategy to accommodate the use of artificial intelligence technology.
Curtis & Clare (2017)	Australia	Empirical	Contract Cheating Behavior of University Students	Reveals the repeated behavior of students in cheating.
Dwivedi et al. (2023)	Global	Conceptual	ChatGPT Technology	Discusses the opportunities and risks associated with the application of artificial intelligence technology in research.
Eaton (2023)	Canada	Conceptual	Maintaining Academic Integrity in the Age of Artificial Intelligence Technology	Discusses the changing academic integrity policies in the artificial intelligence technology era.
Floridi et al. (2018)	Europe	Conceptual	Artificial Intelligence Ethics	Discusses the ethical dimensions of artificial intelligence technology.
Heffernan & Heffernan (2014)	USA	Empirical	Intelligent tutoring systems	Demonstrates the effectiveness of AI-driven tutoring platforms.
Holmes & Tuomi (2022)	Europe	Review	AI in education practice	Reviews current developments and governance issues in AI education.
Holmes et al. (2021)	Global	Conceptual	AI ethics in education	Proposes collaborative ethical frameworks for AI adoption.
Kasneci et al. (2023)	Germany / Europe	Conceptual	Large language models in education	Discusses opportunities and risks of ChatGPT in academic settings.
Kuleto et al. (2021)	Europe	Empirical	AI adoption in higher education	Identifies institutional opportunities and challenges of AI integration.
Laupichler et al. (2022)	Germany	Scoping review	AI literacy	Defines the competencies required for AI literacy in education.
Lim et al. (2023)	Global	Conceptual	Generative AI and pedagogy	Argues for transforming teaching and assessment methods.

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Long & Magerko (2020)	USA	Conceptual	AI literacy competencies	Establishes a framework for understanding AI literacy.
Ng et al. (2021)	Hong Kong	Conceptual	AI literacy education	Provides a framework for teaching and evaluating AI literacy.
Popenici & Kerr (2017)	Australia	Conceptual	AI impact on higher education	Examines implications of AI for teaching and learning.
Rahman et al. (2023)	Japan	Review	ChatGPT in education	Discusses policy implications and ethical considerations.
Rudolph et al. (2023)	Singapore / Global	Conceptual	ChatGPT and Assessment	Questions the reliability of traditional assessment methods.
Selwyn (2019)	United Kingdom	Conceptual	AI and the future of education	Critically analyzes technological narratives in education.
Spector (2022)	USA	Conceptual	AI theory in education	Provides a conceptual foundation for AI-based learning.
Su et al. (2022)	China/Asia	Systematic review	AI literacy research	Identifies research gaps and curriculum needs in AI literacy.
Tlili et al. (2023)	Global	Case study	Chatbots in education	Demonstrates how chatbots support learning while highlighting ethical concerns
Williamson & Eynon (2020)	United Kingdom	Conceptual	AI and global education policy	Explores policy and governance issues in AI education.
Zawacki-Richter et al. (2019)	Germany/Global	Systematic review	AI in higher education	Identifies key research trends and gaps.
Zhai et al. (2021)	China/Global	Review	AI developments in education	Summarizes AI research progress from 2010 to 2020.

Note: *The country column represents the authors' institutional affiliation or the study context.*

Publication Trends

The publication trends of the selected literature show an increased number of publications after 2020, coinciding with the rapid growth of generative AI technologies and their implementation in the field of education (Baidoo-Anu & Ansah, 2023; Lim et al., 2023). The older literature is more focused on intelligent tutoring systems and learning analytics (Heffernan & Heffernan, 2014; Chen et al., 2020), while the recent literature is more focused on ethical considerations, assessment issues, and the development of AI literacy (Holmes & Tuomi, 2022; Su et al., 2022). Higher education is the dominant setting of the selected literature, reflecting the early implementation of AI tools and the increased concern about academic integrity (Bond et al., 2024; Zhai et al., 2021).

TABLE 2: Publication Characteristics of Reviewed Studies

Area of Focus	Dominant Period	Typical Context
Intelligent tutoring systems	2014-2019	Higher education, STEM
AI ethics and literacy	2020-2025	Higher education
Generative AI (ChatGPT)	2023-2025	Universities

Conceptualizations of AI Literacy

AI literacy has been conceptualized as a multidimensional construct that incorporates technical, ethical, and critical competencies (Long & Magerko, 2020; Ng et al., 2021; Su et al., 2022). Technical AI literacy focuses on understanding the functionality and application of AI systems to facilitate learning (Chen et al., 2020; Kasneci et al., 2023). Ethical AI literacy involves understanding the responsible use of AI and academic integrity (Ng et al., 2021; Laupichler et al., 2022). Critical AI literacy involves understanding the evaluation and limitations of AI-generated outputs in terms of reliability and accuracy (Long & Magerko, 2020; Chen et al., 2022). Some researchers have suggested that technical

competence on its own is insufficient to ensure academic integrity (Holmes & Tuomi, 2022; Su et al., 2022).

TABLE 3: Dimensions of AI Literacy Identified in the Literature

Dimension	Description	Key Sources
Technical	Understanding AI functionality and applications	Chen et al. (2020); Kasneci et al. (2023)
Ethical	Responsible and fair use of AI	Ng et al. (2021); Laupichler et al. (2022)
Critical	Evaluating accuracy and bias in AI outputs	Long & Magerko (2020); Chen et al. (2022)

AI and Academic Integrity

The reviewed studies all identify academic integrity risks associated with the use of AI, including plagiarism, contract cheating, and ambiguity of authorship. The generative AI tools allow for quick and human-like text creation, thereby complicating detection methods and raising the risk of AI-generated submissions without proper acknowledgment (Cotton et al., 2023; Baidoo-Anu & Ansah, 2023). The risk of contract cheating is also increased by the ability of AI tools to create entire academic works, thereby validating previous studies that identified the prevalence of third-party help in higher education institutions (Curtis & Clare, 2017; Bretag et al., 2019). The ambiguity of authorship is also identified as an emerging academic integrity risk, given the difficulty in differentiating between student and AI-assisted work (Rudolph et al., 2023; Rahman et al., 2023). All these risks highlight the need to develop new academic integrity frameworks that account for the use of AI tools in academic work (Eaton, 2023; Holmes et al., 2021).

TABLE 4: Integrity Risks Linked to AI Use

Risk Type	Description	Supporting Studies
Plagiarism	AI-generated text submitted without attribution	Cotton et al. (2023); Baidoo-Anu & Ansah (2023)
Contract	Cheating AI substitutes for third-party ghostwriting	Bretag et al. (2019); Curtis & Clare (2017)
Authorship ambiguity	Unclear ownership of AI-assisted work	Rudolph et al. (2023); Rahman et al. (2023)

Pedagogical Responses

The pedagogical interventions identified in the literature highlight the importance of the proactive integration of AI literacy in the curriculum and assessment processes. The importance of explicit instruction in the ethical use of AI and the critical evaluation of AI outputs is emphasized as a key factor in the mitigation of the misuse of AI in the literature (Ng et al., 2021; Su et al., 2022; Laupichler et al., 2022). The redesign of assessment processes is another key factor that is emphasized in the literature, with the use of reflective assessment, oral exams, and process-based assignments that require evidence of learning rather than the use of automated processes being highlighted as key strategies in the mitigation of the misuse of AI in assessment processes (Holmes & Tuomi, 2022; Lim et al., 2023). The importance of institutional policy in the standardization of the use of AI and the establishment of clear academic integrity policies is also emphasized in the literature (Cotton et al., 2023; Eaton, 2023; Zawacki-Richter et al., 2019). Overall, these strategies indicate a clear move away from punitive approaches in the management of the use of AI in assessment processes.

TABLE 5: Pedagogical and Institutional Strategies

Strategy	Purpose	Key Sources
AI literacy training	Promote informed and ethical use.	Ng et al. (2021); Su et al. (2022)
Assessment redesign	Reduce the feasibility of AI misuse	Holmes & Tuomi (2022); Lim et al. (2023)
Institutional policy	Standardise acceptable AI practices	Eaton (2023); Cotton et al. (2023)

Study Selection and Characteristics

This systematic review is a comprehensive analysis of 29 peer-reviewed articles on artificial intelligence in education, AI literacy, and academic integrity in higher education (Baidoo-Anu & Ansah, 2023; Bond et al., 2024; Zawacki-Richter et al., 2019). The selection of studies was carried out using the PRISMA 2020 framework and identified 29 peer-reviewed articles on the topic of artificial intelligence in education and its related concepts (Kasneci et al., 2023; Dwivedi et al., 2023). The articles reviewed include conceptual works, empirical studies, and review articles on artificial intelligence and its related concepts and tools, such as ChatGPT and other generative AI tools (Kasneci et al., 2023; Dwivedi et al., 2023). The findings are summarized in

five sections: publication trends, conceptions of AI literacy, AI and academic integrity, pedagogy, and regional trends.

Regional Patterns

Geographically, the literature is dominated by studies that originated in Europe, North America, and Australia (Bond et al., 2024; Williamson & Eynon, 2020). The literature from the Global South is limited and primarily focuses on the infrastructural challenges and access and policy development rather than pedagogical strategies (Kuleto et al., 2021; Rahman et al., 2023). This indicates that the current understanding of the importance of AI literacy in the establishment of academic integrity may be heavily influenced by Global North perspectives and may not take into account the variations in available resources and policy frameworks.

DISCUSSION

This section discusses the findings of the systematic review with regard to the research's theoretical framework and emerging debates on artificial intelligence in higher education.

Synthesis of Key Findings

From the review, it is evident that AI literacy is an evolving concept that varies widely in definition. While some studies focus on the functional knowledge of AI systems (Chen et al., 2020; Kasneci et al., 2023), other studies focus on the ethical dimensions of AI literacy (Long & Magerko, 2020; Ng et al., 2021; Su et al., 2022). The fragmented nature of AI literacy research indicates that the concept is still evolving without an accepted definition. Furthermore, the review established that academic integrity issues are primarily driven by assessment mechanisms. The use of generative AI, like ChatGPT, enables the rapid creation of scholarly content, which may lead to plagiarism, contract cheating, and authorship issues (Baidoo-Anu & Ansah, 2023; Cotton et al., 2023; Rudolph et al., 2023). These issues have also been raised as an emerging concern with regard to third-party assistance and contract cheating in higher education (Bretag et al., 2019; Curtis & Clare, 2017). However, the use of AI has amplified these challenges.

A further synthesis of the review's findings is that there is a gap between the use of AI in higher education and the response of higher education policies. Although policy debates on AI use in higher education have started to emerge (Eaton, 2023; Holmes et al., 2021), there is still a lack of policy guidelines on AI use in higher education (Bond et al., 2024; Lim et al., 2023), which is causing confusion among educators and students.

Link to the Theoretical Framework

The study results support the theoretical assumption that AI literacy acts as a mediator between AI use and academic integrity. Emphasis on ethical and critical aspects of AI literacy underlines its importance in promoting positive AI use rather than technical skills (Ng et al., 2021; Laupichler et al., 2022; Su et al., 2022). This is consistent with values-based integrity frameworks that emphasize honesty, fairness, and accountability as fundamental academic integrity values (Eaton, 2023). Moreover, the research results can be related to theories of globalisation and education, such as a global knowledge economy and internationalised curricula (Williamson & Eynon, 2020; Zawacki-Richter et al., 2019). As AI technologies go beyond national borders, disparities in digital infrastructure and regulatory frameworks influence integrity interpretation and enforcement (Kuleto et al., 2021; Rahman et al., 2023). This supports the conceptual model proposed in this review, in which low AI literacy leads to higher rates of AI misuse and academic misconduct, and high AI literacy leads to positive AI engagement and improvement in academic learning (Long & Magerko, 2020; Holmes & Tuomi, 2022).

Implications

From an educator's point of view, the study results suggest that AI literacy should be incorporated into teaching and assessment practices. This involves not only teaching students how to use AI tools but also how to critically evaluate AI results and discuss ethical boundaries (Ng et al., 2021; Su et al., 2022). Assessment practice can also be modified to reduce opportunities for AI misconduct by incorporating more reflective and process-oriented approaches to evaluation (Holmes & Tuomi, 2022; Lim et al., 2023). For institutions, the findings of this study reinforce the need for developing and implementing transparent and well-articulated policies on AI use and for incorporating the principles of academic integrity into these policies (Cotton et al., 2023; Eaton, 2023). There is a need to develop a holistic approach to address AI use in a manner that aligns with pedagogy, policy, and digital governance to ensure a non-punitive approach (Bond et al., 2024). For global policy, the findings of this study reinforce the need for developing harmonised guidelines on AI use in a manner that respects cultural and infrastructural variations while promoting a global approach to ethical standards (Floridi et al., 2018; Holmes et al., 2021). The potential for global organisations and collaborations to influence global policy on AI use in education cannot be overemphasised (Williamson & Eynon, 2020).

Limitations

In spite of the above, the current review has a few limitations, including the fact that it was based on literature reviewed from specific databases, such as Scopus, Web of Science, ERIC, and Google Scholar, which might have left out literature published in other databases or regional repositories. It was also based on literature published in English, which might have left out literature published in other languages, especially where the study was conducted

outside English-speaking countries. There was a publication bias, where literature showing significant or positive results was more likely to have been published than literature showing no results or inconclusive results. There was also the inclusion of conceptual and review literature, which might have varied in terms of the level of rigor used in the study. Therefore, it is recommended that future reviews cover more literature from a wider range of databases, literature published in more than one language, and literature from a wider range of regional sources.

Research Gaps

While interest in AI use in education is increasing, the literature on this topic is still dominated by conceptual and review studies, with few studies on student learning and behavior (Bond et al., 2024; Zhai et al., 2021). There is also a dearth of studies conducted in the Global South, making it difficult to generalise current models and frameworks (Kuleto et al., 2021; Rahman et al., 2023). Moreover, longitudinal studies on how AI literacy and integrity standards change over time and their impact on pedagogy are limited, which makes it difficult to understand the sustained impact of AI use on pedagogy (Holmes & Tuomi, 2022; Su et al., 2022).

CONCLUSION

This systematic review explored the relationship between AI literacy and academic integrity in a globalised world of higher education. The results show that there is an inconsistent understanding of AI literacy, which involves technical, ethical, and critical aspects (Long & Magerko, 2020; Ng et al., 2021; Su et al., 2022). At the same time, issues related to academic integrity, including plagiarism, contract cheating, and authorship, have been exacerbated by generative AI technologies like ChatGPT (Baidoo-Anu & Ansah, 2023; Cotton et al., 2023; Rudolph et al., 2023). These issues are related to assessments and institutional preparedness rather than technology (Holmes & Tuomi, 2022; Lim et al., 2023). Theoretically, this systematic review makes a contribution to the field by conceptualizing AI literacy as a mediator between AI use and academic integrity (Laupichler et al., 2022; Ng et al., 2021). Methodologically, it provides a systematic review of this disjointed research area, which is necessary to address calls for greater coherence and rigor in AI in education research (Bond et al., 2024; Zawacki-Richter et al., 2019). In addition, it provides insights that inform policy development on AI use (Eaton, 2023; Holmes et al., 2021). However, it should be noted that this systematic review is limited to database availability, only English-language publications, and publication bias towards new and positive results (Bond et al., 2024; Zhai et al., 2021).

The recommendations based on the above findings are: First, the integration of AI literacy in higher education curricula, which combines technical skills with ethical considerations and critical evaluation, is recommended (Ng et al., 2021; Su et al., 2022). Such integration is likely to help students better grasp the proper and improper uses of AI tools in academic work (Kasneci et al., 2023; Laupichler et al., 2022). Second, the design of new assessments that focus on reflective, process-based, and authentic learning activities is recommended, which minimizes the scope for AI-assisted cheating (Holmes & Tuomi, 2022; Lim et al., 2023). Third, the promotion of inter-institutional and inter-government collaboration to create academic integrity guidelines that explicitly address AI, considering the diversity of global education systems, is recommended (Floridi et al., 2018; Eaton, 2023; Williamson & Eynon, 2020). Such guidelines are likely to promote uniform ethical standards while being sensitive to the diversity of global education systems, including differences in infrastructure, technological, and regulatory capacities (Kuleto et al., 2021; Rahman et al., 2023).

Future research should focus on designing and conducting empirical and experimental studies to explore the impact of AI literacy interventions on student learning and integrity behaviors over time (Holmes & Tuomi, 2022; Su et al., 2022). Cross-national comparative studies are recommended to take into account the diversity of regional policies, technological, and integrity standards, particularly in the underrepresented Global South countries (Bond et al., 2024; Kuleto et al., 2021). More attention should be paid to the voices of students and educators, whose experiences with AI tools and academic integrity policies are less explored and less understood (Cotton et al., 2023; Rahman et al., 2023). By addressing the above research directions, the theoretical understanding of AI literacy and academic integrity is likely to be advanced, which is essential for designing evidence-based strategies to deal with AI literacy and academic integrity in the context of a globalized education system.

Abbreviations

AI – Artificial Intelligence
PRISMA - Preferred Reporting Items for Systematic Reviews and Meta-Analyses
STEM – Science, Technology, Engineering, and Mathematics
LLM – Large Language Model
AIEd – Artificial Intelligence in Education

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Conflict of Interest

The author has no conflicting interests with respect to this research.

Availability of data

The data to report the research findings are only from the sources displayed in this paper.

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Contributions

The study was conceptualized and conducted by the author through a systematic desk review. The data was also analyzed, and the entire manuscript was written by him. This study contributes to the body of knowledge by identifying the definition of AI literacy and its association with AI-related integrity challenges in higher education settings.

Author's Biography

Albert Byiringiro is a part-time lecturer at Mount Kigali University and the Institut Catholique de Kabgayi (Rwanda) and offers lectures and supervises student teachers for education-related fields of study. He has vast knowledge and experience in education planning and management, and education research, focusing on the innovations that exist and are applicable in the learning processes and methodologies. He is currently pursuing his Ph.D. studies in Education Planning, Management, and Administration at Bishop Stuart University (Uganda). He has also published papers that focus on the involvement of the stakeholders in the education system of Rwanda, aside from others that are relevant to global education. Albert Byiringiro is conversant with English, French, Swahili, and Kinyarwanda. He also undertakes research and consultancy work that focuses on his area of interest, with the objective of enhancing educational success and the digital transformation process that supports social development and the process of globalization.

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