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Ethical AI Learning and Social Skill Enhancement in Higher Education: A Systematic Review

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Abstract: Artificial Intelligence (AI) is progressively shaping the educational landscape, offering new opportunities to enhance teaching and learning. This review aims to investigate the ethical dimensions of AI and its impact on social skills in higher education. It employs a systematic review of peer-reviewed literature to explore the ethical considerations surrounding AI integration in educational settings. The research delves into the ethical aspects of AI's role in fostering students' social skills and provides recommendations for future research. Ethical AI learning principles encompass openness, fairness, privacy, accountability, and inclusivity. Additionally, this study emphasizes the importance of nurturing students' social abilities and highlights how effective leadership and collaborative techniques can improve social connections among academic staff.

Keywords: artificial intelligence; ethic; learning; social skill.

Introduction

Artificial Intelligence (AI) has gained increasing importance in education, with many educational institutions exploring its potential to revolutionize teaching and learning. However, ethical considerations are crucial in this emerging technology (Limna et al., 2022). Integrating AI in higher education has sparked significant interest and innovation, showing promise in customizing learning experiences, improving educational assessments, and optimizing resource allocation. It emphasizes the need to thoroughly examine the ethical dimensions and the potential impact on students' social skills in light of the rapid proliferation of AI in education.

As AI continues to expand its influence in higher education, assessing its broader implications on developing students' social skills become increasingly important. Integrating AI while upholding ethical boundaries effectively presents opportunities and challenges that warrant careful consideration. Navigating the ethical complexities associated with AI in education is essential in our rapidly evolving technological landscape (Stahl, 2021). Understanding the effects of AI on enhancing social skills is vital to establishing a well-rounded and responsible educational environment that equips students with both technological proficiency and interpersonal abilities.

Moreover, it is essential to underscore educators' significant role in nurturing students' social competencies in conjunction with the integration of AI. Educators should lead in guiding students to utilize AI for collaborative and morally sound learning (Kim, 2023). Have the capacity to establish learning environments that foster collaboration, empathy, and effective communication, guaranteeing that students possess technological proficiency and social adaptability. Additionally, the responsibility of addressing the ethical aspects of AI in education is a collective endeavor that involves educators, policymakers, and researchers working together to formulate guidelines and optimal strategies that protect students' welfare and ensure the ethical use

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of AI. This collaborative initiative ensures that the integration of AI benefits students (Alam, 2021) while upholding the core values and competencies necessary for their social growth.

Prior studies have recognized various ethical dilemmas within K -12 environments, including issues like personalized learning platforms to enhance student learning, automated assessments, and the requirement for instructional methods and materials for educators looking to incorporate AI technology into education (Akgun and Greenhow, 2022). However, there needs to be more substantial contemplation regarding the challenges and potential hazards of AI in education. Additionally, there is a limited association with theoretical and pedagogical frameworks and an urgent necessity for a more thorough exploration of ethical and educational methodologies when applying AI in education within higher education (Zawacki-Richter et al., 2019).

The uniqueness of this research lies in its extensive review of AI applications in higher education, with a specific focus on ethical dimensions and the effects of AI on students' social skills. It addresses the following research questions: (1) What ethical principles in AI, specifically within higher education settings, contribute to fostering ethical AI learning, and how do these principles shape the development and implementation of AI technologies in education? (2) How does the integration of artificial intelligence (AI) in higher education impact students' development of social skills?

This research aims to provides educators with a comprehensive understanding of AI applications in higher education, focusing on ethical aspects and the influence of AI on students' social abilities. It underscores the challenges and potential pitfalls associated with AI in education within higher education and the necessity for a more profound examination of ethical and educational methodologies. Furthermore, it offers pedagogical techniques and educational resources for instructors seeking to incorporate AI applications into their teaching and effectively address the ethical intricacies associated with AI in education.

Methods

The research employed a systematic literature review, explicitly examining academic journals related to Ethical AI Learning and Social Skill Enhancement in Higher Education. The systematic approach ensured a comprehensive and structured analysis of relevant articles.

Article Selection Process

The literature search was conducted using the "publish or perish" method with the search keywords "Ethical AI Learning and Social Skill Enhancement in Higher Education" The search was constrained to articles published between 2021 and 2023. Data were gathered from Google Scholar and Semantic Scholar. The initial search yielded 996 pertinent articles from Google Scholar and two from Semantic Scholar. After a careful selection process and adjustments to the criteria, eight articles were ultimately chosen for analysis, as illustrated in Figure. 1.

Criteria for Selection

This study used four criteria for selecting articles for further analysis. Firstly, the articles were required to primarily focus on Ethical AI Learning and Social Skill Enhancement in Higher Education. Secondly, the chosen articles must have been published between 2021 and 2023. Thirdly, the articles had to be in the English language. Lastly, the selected articles were also expected to be indexed by Scopus

Analysis of Data

The analysis of the articles involves three distinct stages. The first stage involves assessing how effectively the chosen keywords correspond with the content and primary subject matter of Ethical AI Learning and Social Skill Enhancement in Higher Education. If the titles meet the suitability criteria, the second stage proceeds to examine the abstracts to determine if they accurately reflect the research objectives of this study. In the third stage, if the abstracts are relevant to the research goals, the authors conduct a comprehensive analysis of the articles, paying close attention to their research

objectives and findings. The extraction and synthesis of the research results follow it.

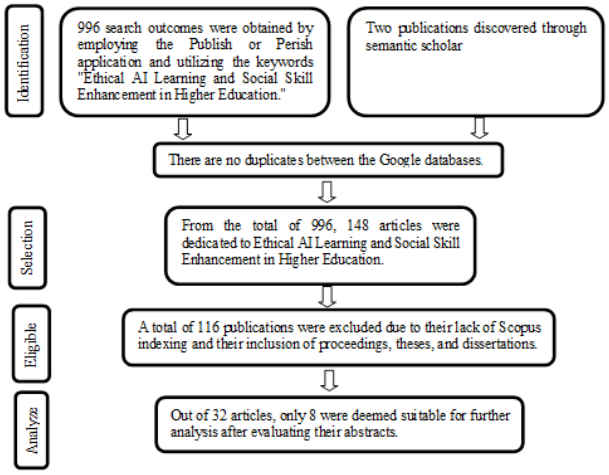

Figure 1. Displays the process of article selection based on Prisma

Results and Discussion

Eight studies have been published in peer-reviewed journals from 2021 to 2023. After analyzing the content of the 8 articles, it can be categorized into two sub-sections: "Ethics in AI and Ethical AI Learning" and "Enhancing Social Skills in AI and Higher Education." The summary of these reviewed studies can be found in Table 1.

Table 1. Summary of studies.

Author	Year	Source	Title	Citation
Hera Antonopoulou *et al.*	2021	Emerging Science Journal	Transformational leadership and digital skills in higher education institutes	170
Davy Tsz Kit Ng *et al.*	2021	Computers and Education: Artificial Intelligence	Conceptualizing AI literacy: An exploratory review	149
Mona Ashok *et al.*	2022	International Journal of Information Management	Ethical framework for artificial intelligence and digital technologies	120
Valentin Kuleto *et al.*	2021	Sustainability	Exploring opportunities and challenges of artificial intelligence and machine learning in higher education institutions	93
Emre Kazim and Adriano Soares Koshiyama	2021	Patterns	A high-level overview of AI ethics	86
Joel Walmsley	2021	AI & SOCIETY	Artificial intelligence and the value of transparency	53
Andy Nguyen *et al.*	2023	Education and Information Technologies	Ethical principles for artificial intelligence in education	52
Selena Nemorin *et al.*	2023	Learning, Media and Technology	AI hyped? A horizon scan of discourse on artificial intelligence in education (AIED) and development	34

Based on the analysis of all the papers, it is possible to determine that six articles focus on "Ethics in AI and Ethical AI Learning," these articles can be found in research numbers 2, 3, 5, 7, and 8. In the meantime, the last two articles that delve into "Enhancing Social Skills in Artificial

Intelligence and Higher Education" can be found in studies numbered 1 and 4.

Ethics in AI and Ethical AI Learning

Ethics, originating from the Latin word “ethic” and the Greek term “ethos,” comprises a set of moral principles, values, norms, and standards that steer human behavior toward favorable results. In artificial intelligence (AI), ethics encompasses a framework of guiding principles and values that govern the conduct and evolution of AI systems (Waelen, 2022). This domain of AI ethics has emerged as a response to mounting apprehensions regarding the consequences of AI technologies. It serves as a structure grounded in moral, legal, and ethical deliberations that underlie all aspects of AI.

The field of AI ethics and the ethical learning of AI encompass a wide range of factors and principles that oversee the moral aspects of artificial intelligence. It is marked by a fundamental requirement to tackle ethical issues about different facets of AI, whether in the broader context of AI ethics, AI’s involvement in education, or its worldwide use. A consistent theme running through these conversations centers on the significance of fundamental ethical principles such as transparency, equity, responsibility, and inclusivity, which serve as foundational components in AI systems, as outlined in Table 2.

Table 2. Description of AI ethics.

AI Ethics	Sample Studies
Transparency and Explainability	Walmsley (2021); Kazim and Koshiyama (2021); Ng et al. (2021); Nguyen et al. (2023); Nemorin et al. (2023), and Ashok et al. (2022)
Fairness and Non-Discrimination	Walmsley (2021); Kazim and Koshiyama (2021); Ng et al. (2021); Nguyen et al. (2023); Nemorin et al. (2023), and Ashok et al. (2022)
Privacy and Data Protection	Kazim and Koshiyama (2021); Nguyen et al. (2023); and Ashok et al. (2022)
Accountability and Responsibility	Kazim and Koshiyama (2021); Ng et al. (2021); Nguyen et al. (2023); Nemorin et al. (2023), and Ashok et al. (2022)
Inclusiveness and Accesability	Ng et al. (2021) and Nguyen et al. (2023)

1. Transparency and Explainability
   Transparency, which ensures that AI systems stay accessible and understood, is a critical tenet of AI ethics. Research outcomes, as demonstrated by the work of Walmsley (2021), Kazim and Koshiyama (2021), Ng et al. (2021), Nguyen et al. (2023), Nemorin et al. (2023), and Ashok et al. (2022), provide backing for this idea. Transparency pertains to governance and accountability, while explainability examines how AI makes decisions. The objective is to make AI understandable to diverse stakeholders, with varying clarity levels depending on their knowledge and roles. Technical aspects, including accuracy and traceability, play a pivotal role. Moreover, accountability for maintaining these ethical standards falls on the shoulders of AI developers.
2. Fairness and Non-Discrimination
   Emphasizing fairness and eliminating discrimination is at the core of ethical considerations in AI. Ensuring that AI systems are designed with meticulous care to treat all users equitably, regardless of their inherent characteristics, is a fundamental principle. This perspective is supported by research conducted by Walmsley et al. (2021),Nemorin et al. (2023), Ashok et al. (2022), Nguyen et al. (2023), Kazim and Koshiyama (2021)and Ng et al. (2021), underscoring the importance of addressing bias and promoting non-discrimination in AI technology development. By upholding these principles, we aim to create AI systems that are

just, unbiased, and respectful of human diversity.

3. Privacy and Data Protection
   Privacy, often defined as the right to exercise control over one's personal information, represents a fundamental ethical tenet within the domain of AI. Central to AI ethics is the preservation of personal data and the assurance of its responsible utilization, following the principles articulated by Kazim and Koshiyama (2021), Nguyen et al. (2023), and Ashok et al. (2022). Demonstrating due respect for individuals' privacy transcends ethical obligations, extending into the realm of legal compliance, as evidenced by the requirements of data protection regulations like the General Data Protection Regulation (GDPR). Therefore, integrating robust privacy measures into AI systems emerges as a critical imperative for upholding public trust and adhering to ethical AI standards.
4. Accountability and Responsibility
   Accountability encompasses the duty to answer for one's actions and choices, stressing the necessity to hold individuals and entities responsible for the results of AI systems. On the other hand, responsibility entails acknowledging the repercussions of one's actions within the domain of AI. This emphasis on both responsibility and accountability in AI is corroborated by numerous studies, including those undertaken by Kazim and Koshiyama (2021), Ng et al. (2021), Nguyen et al. (2023), Ashok et al. (2022), and Nemorin et al. (2023), underscoring their significance in ethical AI education and implementation. These principles not only serve as ethical guidelines but also play a pivotal role in ensuring that AI technologies contribute to societal well-being while minimizing harm. Promoting the responsible development and use of AI is indispensable for cultivating public trust and upholding ethical standards in the rapidly evolving field of artificial intelligence.
5. Inclusiveness and Accessibility
   Inclusiveness in AI, which involves engaging individuals regardless of their abilities or disabilities, is a fundamental ethical principle. It is imperative to create AI systems that offer accessibility to all individuals, as evident from research conducted by Nguyen et al. (2023) and Ng et al (2021). This dedication to inclusivity and accessibility highlights the ethical obligation to prevent AI technologies from discriminating against individuals with varying abilities or characteristics. It corresponds with the overarching objective of making AI a valuable and inclusive tool for all members of society, emphasizing the importance of designing AI systems with diverse user needs in consideration.

Within these ethical principles, the cognitive and information domains within digital ethics play pivotal roles. The cognitive domain delves into critical ethical considerations encompassing intelligibility, accountability, fairness, and autonomy, as found in the research by Ashok et al. (2022). Intelligibility emphasizes making AI and digital systems transparent and understandable, ensuring their underlying mechanisms remain clear and not overly complex. Accountability establishes distinct responsibilities for the outcomes of AI systems, holding individuals or organizations answerable for their actions (Dignum, 2021). Fairness aims to mitigate biases and discrimination within AI systems, ensuring equitable treatment of all users. Autonomy deals with the ethical issues surrounding the degree of control that individuals have over AI and digital technologies in shaping decisions that affect their lives. In contrast, the information domain places a crucial ethical concern at its forefront: privacy. Within digital ethics, privacy, a part of the information domain, is a core component, as highlighted by Gregory and Halff (2020). This domain delves into the intricacies of data collection, utilization, and storage, focusing on responsibly and ethically safeguarding personal information. Given the increasing prevalence of data privacy breaches and the misuse of personal data, the ethical mandate of preserving privacy is of substantial significance. Incorporating the cognitive and information domains into digital ethics enhances the conversation by emphasizing

aspects linked to intelligibility, accountability, fairness, autonomy, and privacy. This multidisciplinary viewpoint brings a more profound understanding of the ethical hurdles in AI, recognizing the intricate interaction between technical and moral aspects.

AI ethics is inherently interdisciplinary, drawing knowledge and insights from diverse fields (Bisconti et al., 2023) such as philosophy, sociology, engineering ethics, and international policies, a comprehensive approach that is crucial in understanding and responding to the multifaceted ethical challenges posed by AI. Additionally, it emphasizes the global perspective, acknowledging that AI and ethics must be addressed in both developed and developing regions, thereby recognizing the complexities of implementing trustworthy AI across diverse global contexts.

In addition to these fundamental ethical considerations, organizations confront various ethical challenges when deploying AI technologies, including addressing legal issues that may arise when things go wrong. Effective solutions often require integrating AI policies into the codes of conduct. Still, the success of these policies depends on employees adhering to the rules, which may sometimes prove to be a complex endeavor (de Almeida et al., 2021). Ethical AI learning also embodies the principle of beneficence, ensuring that AI systems are constructed to benefit humanity and prevent harm, prioritizing the well-being of individuals as AI continues to become increasingly integrated across various domains.

As the demand for ethical guidelines and standards surges, numerous organizations and governmental bodies are formulating frameworks to regulate the ethical use of AI, promoting its responsible development and deployment. Ethical AI learning encompasses not only the technical aspects of AI but also the moral considerations that should guide AI development and utilization (Jobin et al., 2019). Educating individuals about AI ethics is an integral part of this process, as it covers not just the technical dimensions of AI but also the moral principles that should inform AI's development and use, aligning with findings in the domain of AI ethics.

In conclusion, AI ethics serves as an essential framework that intertwines with the very fabric of artificial intelligence, guiding its evolution and ensuring that it benefits humanity while upholding the highest ethical standards. Recognizing the difficulties in implementing AI technologies and incorporating ethical principles into organizational codes of conduct reveals a pragmatic grasp of the intricacies at play. Including the beneficence principle introduces a subtle dimension, underscoring the importance for AI systems to not merely steer clear of harm but actively contribute to the overall welfare of society. Nonetheless, delving more deeply into particular challenges and plausible solutions could augment the thoroughness of the analysis.

Enhancing Social Skills in Higher Education

In higher education, the significance of social skills cannot be emphasized enough, extending beyond the academic sphere into broader life success. The demand to nurture and enhance these skills within higher education has gained exceptional importance, particularly as educational landscapes are being redefined by transformative forces like artificial intelligence (AI). Within this context, universities assume a dual role by not only imparting academic knowledge but also by actively fostering robust social skills among their students. These encompass a range of proficiencies, including effective collaboration, proficient communication, adept problem-solving, and the capacity to adapt to diverse environments. In our swiftly evolving technological world, these competencies have taken on an elevated role. Kuleto et al. (2021) found that within higher education institutions, a collaborative learning environment underscores the significance of AI and its role in improving personalized learning.

Consequently, higher education institutions are prompted to adapt to this shifting landscape by establishing an educational environment that systematically promotes the cultivation and enhancement of social skills. This strategic focus on developing social skills serves as a fundamental cornerstone for students, equipping them for academic success and empowering them to confront the multifaceted challenges posed by AI

and other technological advancements. Universities have the potential to deliver a holistic educational experience that fosters not only academic excellence (Bowden et al., 2021) but also the social skills essential for emerging as influential leaders and innovative contributors within our increasingly interconnected and technology-driven society. A graduate's success in workplaces influenced by AI goes beyond technical expertise; for instance, successful projects benefit from strong collaboration and effective communication. Integrating AI solutions is facilitated by social skills such as adaptability and problem-solving, underscoring the crucial role of interpersonal abilities in graduates' accomplishments.

The evolving trends in higher education signify fresh challenges in the face of changing social dynamics and technology. Leadership within higher education assumes a central role in addressing the implications of these transformations as supported by Antonopoulou's (2021) research. For instance, effective leadership can enhance the social interactions among academic staff by endorsing a collaborative leadership approach. A critical analysis is crucial to address challenges in fostering social skills within higher education, notably institutional resistance to change and resource constraints. Understanding the root causes of resistance, whether from faculty skepticism or bureaucratic hurdles, is vital for devising targeted strategies. Simultaneously, identifying innovative solutions for resource constraints requires careful examination. This nuanced analysis is essential for developing effective and context-specific interventions to enhance social skill development.

However, the extensive adoption of artificial intelligence (AI) in education has raised concerns regarding ethical considerations, privacy, and the equitable availability of AI technology (Holmes et al., 2022). Academic leaders are responsible for ensuring that the incorporation of AI in higher education aligns with ethical principles and encourages active engagement from diverse stakeholders. The introduction of AI in higher education has also sparked concerns regarding the privacy of student data and equitable access. Consequently, ethical principles, notably the principle of justice, should guide efforts to rectify disparities in AI technology access within academic environments.

Furthermore, the issue of diversity in terms of access to and utilization of AI technology necessitates significant attention within higher education (Ocaña-Fernández et al., 2019). Leadership that champions inclusivity and acknowledges the value of diversity contributes to the reinforcement of social interactions in higher education. Moreover, academic leaders who possess a comprehensive understanding of AI trends in education can play a pivotal role in mitigating the adverse effects of AI on student social interactions (Seo et al., 2021). The diversity concerning access to and utilization of AI technology is an issue demanding consideration within higher education. Ethical principles, such as justice, should be the driving force behind endeavors to rectify inequalities in AI technology access within academic settings. Challenges linked to promoting diversity in AI technology access in academic environments may involve uneven distribution of resources and the necessity for customized educational methods to cater to diverse levels of technological familiarity among students. Successfully addressing these challenges demands a holistic approach considering resource allocation and educational assistance.

As the higher education landscape continues to evolve in close association with AI and technology, there is an imperative need for a comprehensive approach that comprehends the impact of AI and technology on human interactions (Zawacki-Richter et al., 2019). Higher education institutions should take tangible measures to ensure that robust social interactions are an inherent component of technology integration in the era of AI. By incorporating leadership that fosters social skills, digital capabilities, and AI ethics, higher education can establish a responsive and inclusive environment. Within this framework, social skills gain unprecedented significance in addressing the trends associated with AI integration in higher education, guaranteeing that higher education delivers a responsible and beneficial learning experience for students.

In the ever-changing landscape of higher education, where technology and AI are revolutionizing traditional approaches, institutions must acknowledge the inseparable connection between the cultivation of social skills and students' academic and career achievements. These competencies empower students to navigate not only the academic intricacies but also the complexities of the contemporary professional world. As AI increasingly augments various facets of the workforce, social skills become a valuable asset, providing graduates with a competitive advantage in a world where collaboration, adaptability, and effective communication are paramount.

Higher education institutions, in collaboration with industry partners, hold a pivotal role in ensuring that students acquire the essential social skills for success. They should structure their curricula to include opportunities for practical application of these skills, whether through collaborative projects, leadership development initiatives, or real-world experiences. This comprehensive approach guarantees that students not only learn about social skills but also put them into practice and refine them in real-life situations. By cultivating a learning environment that places a premium on social skills alongside academic excellence, higher education can contribute to shaping graduates who are not only proficient in their respective fields but also socially adept individuals (Ahmad et al., 2023), well-prepared to excel in a world influenced by AI and rapid technological advancements. Besides, implementing collaborative projects, mentorship programs, and experiential learning opportunities are concrete strategies for cultivating social skills in higher education. These initiatives provide students with hands-on experiences, foster effective communication, and enhance problem-solving abilities within diverse environments. Integrating such strategies into the curriculum ensures a comprehensive and practical approach to developing the essential social skills students need for success.

The evolving higher education landscape, characterized by the integration of AI and technology, demands reevaluating the skills necessary for students to thrive in a dynamic and interconnected world. Within this context, social skills emerge as a fundamental element of a holistic education. Institutions of higher education must nurture the growth of interpersonal abilities and equip students with the capabilities essential for achieving success in academic, career, and personal aspects. This approach enables these institutions to guarantee that their alumni are not merely ready to confront the challenges presented by AI but are also in a solid position to emerge as influential leaders and valuable contributors to society.

Conclusions

Using AI in higher education can change the way in teaching and learning, but it also raises important ethical questions. To ensure AI is used relatively, we must follow some essential principles like being transparent and fair, respecting privacy, taking responsibility, and ensuring everyone is included. It is also essential to help students develop social skills, which AI and social skills connect. Lecturers can help create learning environments that include everyone and are responsible. It is essential for developing well-rounded individuals and ensuring higher education is exciting and connected to the future.

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