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Students' Ethical Awareness and Behavior Intentions in the Use of AI Tools: A Proposed Framework

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ABSTRACT

Artificial intelligence (AI) is a mixture of different tools in education that includes transformative opportunities and significant ethical challenges. Even if students are using these AI tools more frequently, it remains unknown how well they understand the ethical implications of doing so. This review summarises the body of research on behavioural intentions of students and ethical awareness regarding the usage of AI in the classroom. Drawing upon studies employing diverse methodologies—such as surveys, qualitative analyses, and experimental designs, the paper examines how students perceive and respond to ethical considerations surrounding AI. Key influencing factors in ethical decision-making are identified, including individual perceptions, institutional policies, and socio-cultural contexts—areas that remain underexplored, particularly in Nepal. The review indicates the need for focused interventions since it shows a gap between students' understanding of AI ethics and their regular use of moral behaviour. A conceptual framework created during the review process is suggested by the study as a solution to this problem. This method highlights that ethical behaviour, environmental factors, and knowledge interact dynamically. It emphasises the need for rule-based ethical education, clear policy, and a subject-related approach to regulating responsible AI. The result calls on educators, academic schools, and policymakers to use evidence-based rules that help to close the gap between ethical awareness and ethical proactive in AI-embedded learning environments.

Keywords: AI in education, ethical awareness, academic integrity, responsible AI use

Introduction

The application and use of artificial intelligence tools like DeepSeek, Gemini, Copilot, and ChatGPT is becoming common in educational as well as other sectors, which is helping students to learn and raise ethical concerns (Rane, 2024; Swidan et al., 2025). AI means the power of self-thinking and self-reasoning attributed to a machine, just like a human does (Khayat, 2023; Swidan et al., 2025). This provides opportunities for learning and increasing overall skills (Sokhanvar et al., 2021; Irfan et al., 2023)

but also raises concerns about over-reliance, educational integrity, and potential for bias (Zhai et al., 2024; Irfan et al., 2023). Students are also showing ethical concerns regarding AI usage. (Griesbeck et al., 2024; Irfan et al., 2023). Students' ethical awareness and behavioral intentions are critical in this evolving AI-included learning environment (Wang et al., 2024; Hua, 2023). AI's growing influence in academics means we should know how students use these tools to overcome ethical challenges and make sure they are used correctly (Slimi et al., 2023; Ali et al., 2024). Identifying students' feelings towards AI is a significant application for the promising use and better implementation of AI in higher academic and research sectors (Al-Mughairi et al., 2024; Irfan et al., 2023).

The mixture of AI appliances and technologies in education brings change to the scenario, providing students with groundbreaking opportunities for learning and developing skills. AI does have advantages and disadvantages. It also promotes concern related to over-reliance, academic dishonesty, and related algorithmic bias. As the use of AI by students is growing, their knowledge of ethical use and application of their understanding has become crucial in this evolving AI-integrated learning environment. Identifying students' perspectives towards AI is crucial for executing successful and helpful application of these technologies in higher academics (Al-Mughairi et al., 2024; Irfan et al., 2023).

Students' attitudes, beliefs, and concepts towards AI in education and higher studies indicate a considerable factor in their engagement and willingness to support these tools responsibly (Irfan et al., 2023). The present academic scenario reflects a growing interest in investigating the outcome of AI on students' ethical considerations and academic integrity. Higher educational institutions are multiplying the trend of adopting AI tools to achieve their wide range of purposes, from automated essay grading and content creation to more sophisticated applications in personalised learning and predictive analytics (Irfan et al., 2023). Moreover, easy access to utilise AI tools for students, specifically generative models, creates important concerns about academic dishonesty, plagiarism, and learning how to think critically. The easily available AI tools draw serious attention to their potential to generate unique and anonymous content, therefore reducing the separation between AI-composed and human-created work (Hua, 2023).

Artificial intelligence appliances have two different potential uses: they can be facilitative learning aids or ethically problematic tools (Students' Ethical Awareness and Behaviour Intentions in the Use of AI Tools: Literature Review, n.d.). AI provides personalized learning experiences that make education compatible with the needs of every individual student, increasing their engagement and changes on what they learn (Irfan et al., 2023). This personalized method deals with the obstacles related to bigger classroom volume in higher academics, like a lack of personal concentration (Irfan et al., 2023). AI-based research can also assist institutions in making data-oriented decisions, enhancing their operational working capacity, and strategic planning (Irfan et al., 2023). Moreover, AI has the capacity to automate tasks for workers in different areas and is expected to enhance business processes efficiently (Kajiwara & Kawabata, 2024).

Nevertheless, the implementation of AI also introduces notable ethical dilemmas. AI-generated content can include biased, incorrect, or wrong information that its users should always have to be careful with (Foltýnek et al., 2023). This may be because of discrimination on training data, algorithms, filters, and the like (Foltýnek et al., 2023). The misuse of AI tools, such as using content produced by AI to complete assignments without citation, jeopardises academic integrity. AI has the power to create original and logically coherent content, making it difficult to detect plagiarism, increasing complications for teachers to distinguish between student-written assignments and content produced by AI (Hua, 2023). Perkins states that AI tools can produce logically correct writing, creating difficulty in detecting plagiarism (Hua, 2023).

Furthermore, biases that persist in AI-generated algorithms can result in unfair or biassed results, keeping marginalized teams at a greater disadvantage. The extensive use of AI tools in online assessment also increases the issue of academic dishonesty (Hua, 2023). To confront these difficulties, there is a high need to revisit curricula and guarantee that students form the necessary skills to excel in a job market transformed by AI (Hua, 2023). It is very important to guarantee that students use AI just to assist, not to replace human intelligence. Students should cultivate skills of critical evaluation to tone down dependency on these AI tools. Institutions should focus on the implementation of programmes to promote ethical academics and raise consciousness of ethical suggestions related to AI tool usage (Hua,2023).

AI literacy is a prime necessity for the ethical use of chatbots and AI tools (Anders, 2024; Kajiwara & Kawabata, 2024). AI literacy includes knowledge of the advantages and disadvantages of technology

and applying such knowledge properly (Kajiwara & Kawabata, 2024). AI literacy includes understanding the fact that AI exists everywhere and is affecting society in different ways, both good and bad (Anders, 2024). If students don't get the opportunity to acquire complete knowledge related to the honest use of AI, they will be open to indulging in the misuse of AI, which can result in educational wrongdoing (Foltýnek et al., 2023).

Ethical awareness in AI use incorporates acknowledging the moral implications and potential consequences of its application. (Students' Ethical Awareness and Behaviour Intentions in the Use of AI Tools: Literature Review, n.d.). It incorporates identifying problems such as prejudice, fairness, transparency, accountability, and privacy (Students' Ethical Awareness and Behavior Intentions in the Use of AI Tools: Literature Review, n.d.). A lack of proper understanding of ethical awareness can result in unintended negative results, which include discriminatory outcomes or compromised privacy (Students' Ethical Awareness and Behaviour Intentions in the Use of AI Tools: Literature Review, n.d.).

Institutions can further promote ethical behaviour by conducting awareness campaigns reinforcing individual responsibility (Students' Ethical Awareness and Behaviour Intentions in the Use of AI Tools: Literature Review, n.d.). It is a prime necessity that all academic community of university administrators, educators, and students actively contribute to promoting ethical rules and structures (Irfan et al., 2023). Their insights obtained from distinct experiences and interactions with AI contribute to forming proper guidelines that are more practical, sensitive, and responsible to those needy people who are directly impacted by AI in education (Irfan et al., 2023). With AI being continuously integrated into the pedagogical practice of the University of Limerick, it must also confront the ethical issues associated with such integration. (Irfan et al., 2023).

Future work should emphasize experimental design to thoroughly examine the effectiveness of ethical interventions while also embedding ethics modules across a range of academic disciplines (Students' Ethical Awareness and Behaviour Intentions in the Use of AI Tools: Literature Review, n.d.). Qualitative research methods, like interviews and targeted groups, can give deeper insights into students' perspectives and ethical decision-making concerning AI. (Students' Ethical Awareness and Behavior Intentions in the Use of AI Tools: Literature Review, n.d.) Cross-cultural studies are also important for identifying contextual elements forming ethical perceptions (Students' Ethical Awareness and Behaviour Intentions in the Use of AI Tools: Literature Review, n.d.). Likewise, emphasis should be given on developing practical problem-solving skills in students with the use of simulations and case studies (Students' Ethical Awareness and Behaviour Intentions in the Use of AI Tools: Literature Review, n.d.).

This present review tends to evaluate existing research papers on the ethical understanding of behavioural trends among students in relation to the use of AI tools (Malik et al., 2023). This review brings together recent studies to acknowledge primary factors that affect students' ethical analytical decision-making processes and their intention of responsible use of AI tools (Hua, 2023.) The scope of this review concerns the use of AI as a writing tool and the use of AI in higher academic.

This review considers studies published over the past five years as a reference, with an emphasis on North American and European contexts. However, this review may limit a focus on specific disciplines or a lack of representation from diverse geographical regions. This review is structured in four different sections: In the first section, it evaluates the theoretical frameworks associated with students' behaviour and AI ethics. In the second section, it analyses the application of AI tools and their effect on students' ethical awareness and academic integrity. The third section deals with synthesizing the findings of factors that determine students' behavioural intentions. The last section concludes the review by acknowledging gaps that persist in literature, creating pavement for future research.

Review of Theory of Planned Behavior (TPB)

TPB serves as a tool to acknowledge the factors that shape people's decisions (Odai & Wiley, 2024). It put forward that an individual's intention to exhibit a student's intention to perform a behavior is the major indicator of whether the behavior will be carried out (Chai et al., 2022). This design is formed by three major factors: subjective norms, attitude, and perceived behavioural control (Odai & Wiley, 2024). Attitude means the evaluation of a person's performance of a behavior, either positive or negative (Odai & Wiley, 2024). It depends on beliefs regarding the outcome of that behavior (Odai & Wiley, 2024). Students likely have a positive attitude when they hold the belief that AI ethically gives positive results

(Odai & Wiley, 2024). Likewise, individual norms refer to a person's belief in social pressure to either carry on a behaviour or let it go. (Chai et al., 2022; Odai & Wiley, 2024).

It's about what the students think important people in their lives believe they should do (Chai et al., 2022; Odai & Wiley, 2024). Likewise, noticed behavioral control refers to an individual's belief about their ability to perform the behavior (Odai & Wiley, 2024). It reflects how difficult or easy a student believes it is to use AI tools ethically (Odai & Wiley, 2024). PBC is influenced by available resources, skills, and opportunities (Odai & Wiley, 2024).

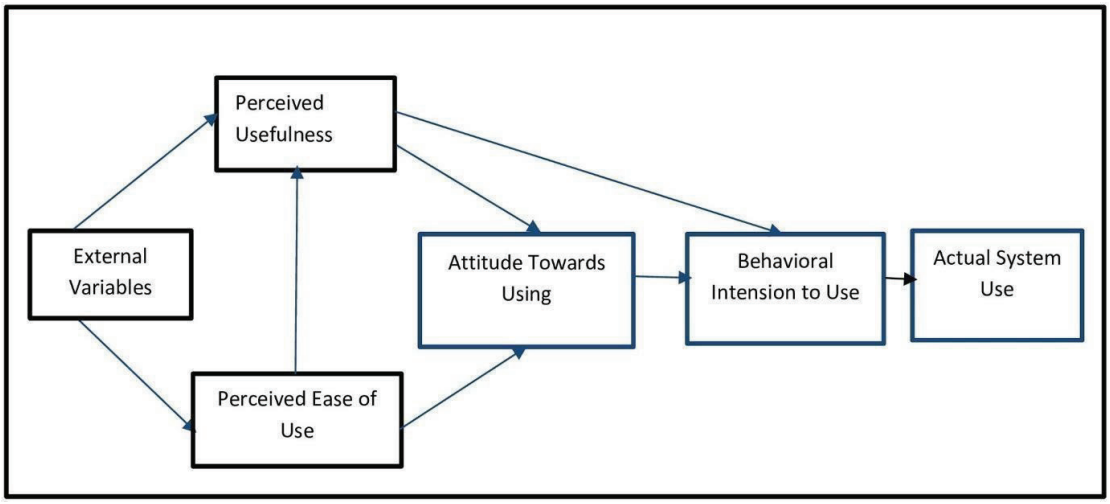
Several studies show that AI's impact on higher academics includes effects on student mental health, social interactions, and communication skills (Klímová & Pikhart, 2025). Students must not depend so much on AI tools. TPB is typically the dependent variable, determined by attitudes towards behaviour, perceived behavioural control, and subjective norms. These are affected by various factors,

which are shown in **Figure 1**.

Source: Ajzen (1985); Mishra et al. (2024)

Students' Ethical Awareness and Behavior Intentions in the Use of AI Tools

A rapid increase in the trend of combining AI into higher academics has set off serious concern



about the subject of students' ethics and behaviour. Understanding students' ethical awareness and their intentions regarding the use of AI is essential for promoting responsible adoption. This review focuses on five core aspects of ethical awareness in AI use: ethical awareness in AI use, behavioural intentions, academic integrity, AI and decision-making ethics, and institutional influences. These five aspects serve either as independent aspects or as aspects providing a holistic lens that can inspect students' ethical orientations and the practical choices they show while using AI technologies. By knowing these aspects, educational institutions can further develop frameworks that promote transparency, accountability, and ethical engagement with AI tools in an academic environment.

1. Ethical Awareness in AI Use

Ethical awareness in AI inspects the effective use of AI and warns us about the AI technologies. It centers on identifying issues such as bias, fairness, transparency, accountability, and privacy (Al-kfairy et al., 2024; Pant et al., 2023). Insufficient ethical awareness can cause unwanted negative results (Ali et al., 2024). Increasing awareness of these issues motivates every AI user to make ethically informed decisions (Al-Kfairy et al., 2024), for effective use of AI in the future. Organisations must be guided by ethical directions (Barton & Papelbon, 2022). Clarity and understandability are key aspects of using AI to encourage trust and understanding in AI-powered processes (AI-kfairy et al., 2024). For the responsible use of AI, organizations should establish rules for stakeholders in the field of academics in alignment with ethical standards for the use of AI tools (Ali et al., 2024). Finally, encouraging ethical awareness is key to the use of AI in the right way, following social values and expectations (Jobin et al., 2019).

Table 1

Studies on the Ethical Use of AI in Education

Author and Year	Methods	Findings	Recommendations
Hua (2023)	Investigation of AI tool impacts on student attitudes, ethical awareness, and academic dishonesty.	Ethical awareness demonstrates a negative association with academic falsehood. This suggests that students with more ethical knowledge may be less prone to academic dishonesty.	Transparency and clear guidelines for AI tool use are essential. More research is needed to explore attitudes towards behaviour, academic dishonesty, and the complicated relationship between AI reliance, ethical awareness, and dishonest behavior.
Ali et al. 2024	Focus group study assessing students' understanding of ethical AI use.	Accountability was the best. Understood ethical concerns. There was a moderately significant lack of awareness among the students. Students' understanding and perceptions develop over time.	Individual responsibility was continually highlighted. Ethical boundaries in education depend on context and requirements.
Borenstein and Howard.2021	Literature review and conceptual analysis.	Ethical considerations are paramount. Hi-tech safety, clarity, and bias are pertinent to academic findings.	AI ethics education should be incorporated into the syllabus, centring on ethical AI design and data science concepts. Coaching supports AI designers and developers to give back to AI's social change thoughtfully.

Different studies examined ethical awareness in AI use through various methods, including surveys (Irfan et al., 2023), investigations (Hua, 2023), focus groups (Ali et al., 2024), and literature reviews (Hua, 2023; Mannheimer et al., 2024). Key discovery indicates different levels of ethical awareness in students (Ali et al., 2024; Irfan et al., 2023), a negative relation between ethical awareness and educational falsity (Hua, 2023), and the importance of addressing ethical application in AI implementation (Hua, 2023; Mannheimer et al., 2024). Advice includes collaborative efforts (Irfan et al., 2023), transparency (Hua, 2023), ongoing ethical education (Irfan et al., 2023), clear guidelines (Hua, 2023), and the inclusion of AI ethics in the course (Hua, 2023). The research also highlights the requirement to consider ethics in AI projects within libraries and archives (Mannheimer et al., 2024).

2. Behavior Intentions in the Use of AI

Behavior intentions in AI refer to the customized readiness to conduct a specific job or behavior, which plays an important role in adopting technology and utilization (Jameel et al., 2023). Identifying the effect of behavioural intentions toward AI is important for uplifting its effective integration (Zhang, 2024). The UTA and the use of IT are widely employed tools for getting individual intentions to use technology utilisation (Jameel et al., 2023). Situations like performance, societal effect, and facilizing provision importantly impact behavioural intention, while effort hope may have a less role (Jameel et al., 2023; Zhang, 2024). Focusing concerns related to data privacy and finding clear organizational rules are also important for encouraging positive behavioral intentions (Odai & Wiley, 2024). Finally, shaping positive attitude and beliefs towards AI is important in heartening its roles and responsibilities (Odai & Wiley, 2024).

Table 2

Studies on Behavioral Intentions and Acceptance of AI Tools

Author and Year	Methods	Findings	Recommendations
Zhang (2024)	Questionnaire data from 175 undergraduates, structural equation modeling.	Use of divine Bot is facilitated by societal effect, quality of information, and performance; ease and risk matter less.	Enhance information quality and leverage social influence to enhance user acceptance of generative AI products.
Odai and Wiley (2024)	Survey of 51 undergraduate communication students, Theory of Planned Behavior.	Behavioral objectives have a positive relationship with attitudes and individual norms.	Personal beliefs and the sensed beliefs of others are correlated to undergraduate students' intent to use GenAI for educational purposes.
Jameel et al. (2024)	Questionnaire analysis from SME managers, SmartPLS.	Performance expectancy, social influence, facilitating conditions, and top management support significantly influence managers' intention to use AI in SMEs, while effort expectancy has little effect.	Incentivize staff to use AI and align their attitudes and intentions with system goals
Kelly et al. (2022)	Systematic Literature Review	Acceptance was defined as the behavioral aim or readiness to utilize, purchase, or use a good or service.	

The learning reviewed in Table 3 employed different methodologies, including surveys and structural equation modelling (Odai & Wiley, 2024; Zhang, 2024), as well as questionnaire analysis using Smart-PLS (Jameel et al., 2023). Key findings show that social influence, information quality, and performance hope are major drivers of behavioral intention to use AI (Zhang, 2024). Ultimately, attitudes and customized policy correlate positively with students' intent to use GenAI (Odai & Wiley, 2024). Expectations in performance, social influence, facilitating situations, and top management support also positively influence AI adoption among SME managers (Jameel et al., 2023). Recommendations include enhancing information quality, leveraging social influence (Zhang, 2024), aligning staff attitudes (Jameel et al., 2023), and recognizing the importance of personal and perceived beliefs (Odai & Wiley, 2024) in fostering AI usage.

3. Academic Integrity and AI-Assisted Learning

Integrating AI into academics represents both challenges and opportunities to educational integrity. AI tools can assist various methods of learning but also show the issues of plagiarism, unauthorised assistance, and the potential for students to outsource urgent thinking skills (Enríquez et al., 2024). Balancing the educational and academic integrity in the age of AI requires a different approach, which includes clear guidelines and educational learning (Al-kfairy et al., 2024). Organizations must address the ethical implications of AI, such as bias and transparency, which ensure fair and unbiased use of these technologies (Sinha, 2024). Solving and managing these issues is very critical for promoting rules of academic integrity in the AI-assisted teaching and learning environment (Balalle & Pannilage, 2025).

Table 3

Studies on AI, Academic Integrity, and Ethical Awareness

Author and Year	Methods	Findings	Recommendations
Hua (2023)	AI investigation tools which effect on educational attitudes, ethical awareness, and academic trust.	Ethical awareness demonstrates a negative association with academic trust. This suggests that students with more Ethical attention may be less prone to educational dishonesty.	Transparency in AI tool usage and clear guidelines are needed. Further research is warranted to understand belief towards academic trust.
Ali et al. (2024)	Focus group study assessing students' belief of ethical AI use.	Responsibility was the best-known ethical concern. There was a reasonably major lack of attention among the students. Students' understanding and perceptions develop over time.	Individual responsibility was continually highlighted. Ethical boundaries in education depend on context and requirements.
Al-Kfairy et al. (2024)	Interdisciplinary Perspective	The secret with which AI may duplicate human writing is a professional risk since it promotes plagiarism.	Academic organizations must adopt AI detection tools and maintain ongoing ethical discussions to uphold academic integrity.
Balalle and Pannilage (2025)	Systematic Literature Review	AI tools' dual role is to support and undermine academic integrity.	Recommendations for ethical AI usage and integrity promotion in education.

The reviewed studies utilise varied methodologies, including investigations (Hua, 2023), focus groups (Ali et al., 2024), interdisciplinary perspectives (Al-kfairy et al., 2024), surveys (Enríquez et al., 2024), and systematic literature reviews (Balalle & Pannilage, 2025), to research the different dimension's connection between educational integrity and AI. Research shows that ethical awareness is linked to reduced academic dishonesty (Hua, 2023), but there's a general lack of awareness regarding ethical AI use (Ali et al., 2024). The research also highlights the multiple Role of AI in both supporting and undermining academic integrity (Balalle & Pannilage, 2025) along with the challenges of detecting AI-generated plagiarism (Al-kfairy et al., 2024). Advice connects to the need for transparency, clear guidelines, ongoing ethical education, and complete training programmes (Enríquez et al., 2024; Hua, 2023).

4. AI and Decision-Making Ethics

Considerable dependency on AI for decision-making in various areas invites complex ethical concerns. (Schultz & Seele, 2022). Integration of AI not only increases efficiency and objectivity but also gives rise to concerns about bias, fairness, transparency, and accountability (Gondola, 2024; Kazim & Koshiyama, 2021). The development, design, and creative application of the right frameworks are essential to ensure calibration with human values and social norms (Rossi & Mattei, 2019). Starting ethical leadership in an organisation is crucial to overcoming ethical challenges that arise in AI-driven

contexts, plus bias and privacy concerns (Uddin, 2023). Embedding ethical concerns into AI design and application enables us to utilise its benefits, reducing potential risks (Ali et al., 2024).

Table 4

Studies on Ethical Issues in AI Decision-Making

Author and Year	Methods	Findings	Recommendations
Gondola (2024)	Findings of ethical aspects of AI decision-making	AI systems can perpetuate unfair outcomes due to biased data sets and algorithm design, particularly impacting marginalized groups.	Ensure data representativeness and fairness in algorithm design to avoid biased results.
Guan et al. (2022)	Examination of ethical threat agents in AI decision-making	Ethical risks arise from the lack of human emotions in AI decisions, uncertainty in technology, and incomplete data, leading to privacy breaches and undermining social justice.	Develop regulations in the area of ethics. Based AI decision-making on complete data, programs, and algorithms.
Victor (2023)	Aristotelian Perspective	Accuracy in AI is often equated with effectiveness, but the ethical scope of data and algorithms must be considered to ensure fairness and unbiased outcomes.	Consider the ethical scope of the data used and the algorithms created to ensure fairness and unbiased outcomes.
Rossi and Mattei (2019)	Discussion of ethical boundaries in AI	AI agents should follow appropriate ethical values and show properties such as fairness and defining the limits of AI's freedom and creativity.	Use of a modular, flexible, approach to integrate AI techniques with context-based weighting for decision-making systems.
Bhengesa (2023)	Analysis of Ethics in AI Decision-Making	AI decision systems must assure fairness by using representative data and testing for bias against specific groups.	Diversify the content used to encourage AI systems to ensure that AI decision-making systems are equal. AI decision-making should be easy to understand who uses it.

All the reviewed sources direct the right dimensions of AI in decision-making, featuring the need for fairness, transparency, and accountability (Bhengesa, 2023; Gondola, 2024; Guan et al., 2022; Rossi & Mattei, 2019; Victor, 2023). The procedure includes the analysis of ethical aspects (Gondola, 2024), findings of risk factors (Guan et al., 2022), logical perspectives (Victor, 2023), and discussions of ethical boundaries (Rossi & Mattei, 2019). Key findings find that AI systems can continue biases due to inclined data and flawed algorithms (Gondola, 2024), and the lack of human emotion in AI decision-making can lead to ethical and personal risks (Guan et al., 2022). The recommendations focus on ensuring data description, broadening training data (Bhengesa, 2023), establishing clear ethical principles (Rossi & Mattei, 2019), and considering the broader societal impact of AI-driven decisions (Victor, 2023).

5. Regulatory and Institutional Influences on AI Ethics

Ethical awareness in AI is notably shaped by rules and organizational forces. All factors like governments, organisations, and different bodies play very important roles in demonstrating rules, policies, and standards that enhance responsible AI design and development (Stahl et al., 2021). The

interrelation between these entities helps to ensure that the AI system will align with societal values, legal requirements, and ethical norms (Al-kfairy et al., 2024). Adaptive AI sway rules are essential for guiding the complexities of this rapidly evolving field (Kulothungan & Gupta, 2025). These ideas must balance innovation with ethical considerations and regulatory oversight to foster public trust and prevent potential harm (Kulothungan & Gupta, 2025; Wu & Liu, 2023).

Table 5

Organizational and Regional Perspectives on Ethical AI Governance

Author and Year	Methods	Findings	Recommendations
Stahl et al. (2021)	Analysis of organizational responses to ethical issues of AI	Industry can shape rules and policy design and development to establish good practices through stockholders.	Companies should implement principles of corporate governance of IT and construct information and data governance to embrace ethical awareness.
Kulothungan and Gupta (2025)	Relative investigation of AI trends in the U.S., EU, and Asia	Diverse regions way AI evolution differently, equation technical progress with ethical and official accountability.	Combining innovation accelerators, strategic alignment, and strategic alignment machines into an adaptive AI governance framework.
Al-Kfairy et al. (2024)	Interdisciplinary Perspective	Implementation of clear rules and guidelines is primary to the ethical use of AI.	Person-generated and AI-generated texts are to be detected by academic and publishing organizations in unique methods.
Wu and Liu (2023)	Systematic Analysis of AI Regulation Proposals	AI rules vary globally due to different cultural and rule priorities.	A dedicated balance between legal restrictions and tech developments is challenging in regulating AI technology.
Ali et al. (2024)	Focus group study imposing students' understanding of ethical AI use	We have not defined system of AI or any legal official unit, but all of them are working on designing and developing rules, especially for AI.	Organisations should set AI usage rules in education aligned with ethical standards for all users of a system.

The reviewed articles explore the regulatory and institutional factors shaping AI ethics, with a focus on governance, policy, and practical guidelines (Ali et al., 2024; Al-kfairy et al., 2024; Kulothungan & Gupta, 2025; Stahl et al., 2021; Wu & Liu, 2023). Methodologies include organizational analysis (Stahl et al., 2021), comparative regional studies (Kulothungan & Gupta, 2025), and interdisciplinary perspectives (Al-kfairy et al., 2024). The key findings suggest that regulatory approaches vary across regions (Kulothungan & Gupta, 2025), organisations can play a proactive role in shaping ethical practices (Stahl et al., 2021), and clear rules are important for ethical AI use (Al-kfairy et al., 2024). The recommendations converge on the need for adaptive governance frameworks

(Kulothungan & Gupta, 2025), corporate initiatives promoting ethical awareness (Stahl et al., 2021), and the establishment of guidelines for AI use in various sectors, including education (Ali et al., 2024; Al-kfairy et al., 2024).

Conceptual Framework for the Use of AI Tools

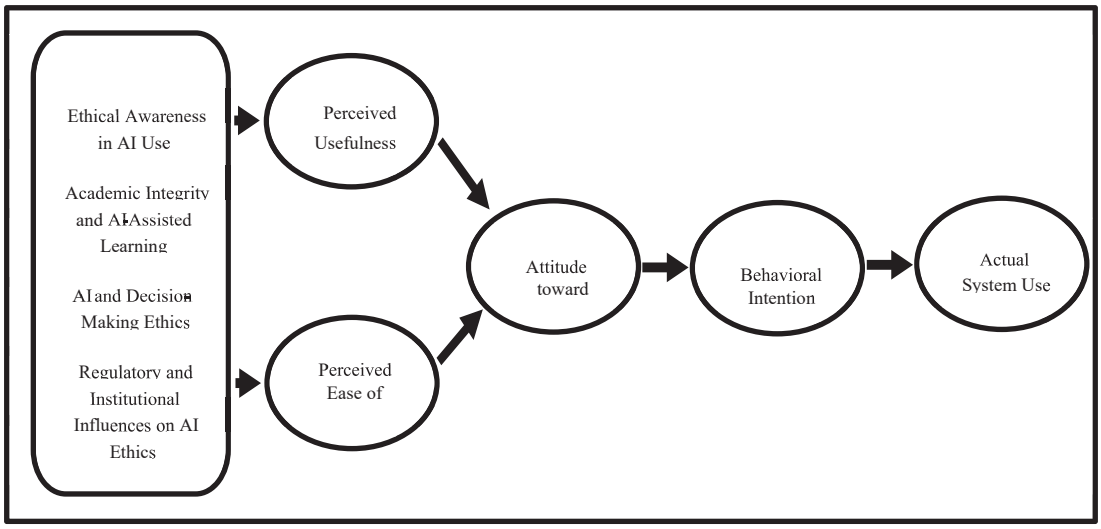
The present literature review analyzes the research on students' ethical awareness and attitude intentions regarding using artificial intelligence (AI) tools in education. Grounded on systematic tools, this review integrates existing studies to evaluate research designs, identify limitations, and assess overall research quality (Lin & Su, 2024). The present review adopted a comprehensive search strategy drawing on academic databases and searching keywords including 'AI ethics,' students,' 'artificial intelligence,' 'academic integrity,' and 'higher education' (Malik et al., 2023). Selected studies centred on students pursuing higher studies and their concern towards the ethical aspects of AI and provided either empirical evidence or theoretical perspectives.

Various methodologies, such as quantitative inspections, qualitative focus groups, and mixed-methods design, are applied to identify students' behaviour and ethical considerations related to AI use. (Malik et al., 2023; Irfan et al., 2023; Ali et al., 2024). Nonetheless, numerous limitations are consistently identified during this research period, such as reliance on self-reported data prone to social desirability bias, sample bias from limited institutional diversity, insufficient longitudinal research, overly general treatment of AI without focus on specific tools, and subjective interpretation of qualitative data. (Kajiwara & Kawabata, 2024; Malik et al., 2023; Ali et al., 2024). Researchers should be motivated to adopt a robust and extensive research design to improve future research.

To strengthen future research, scholars are encouraged to employ robust research designs, such as longitudinal methods, diverse and representative samples, and focused analyses on distinct AI tools, while also applying rigors data analysis techniques to reduce bias and enhance validity (Mal ik et al., 2023; Yu & Yu, 2023). Despite progress in the field, critical research gaps remain particularly the need for long-term studies to track changes in ethical awareness, the inclusion of underrepresented educational contexts, empirical evaluations of ethics-based interventions, and focused inquiry into ethical implications of specific AI applications (Irfan et al., 2023; Usher & Barak, 2024; Ali et al., 2024). Based on this review, the study conceptualized a framework grounded in the Theory of Planned Behaviour, incorporating key variables (see Figure 2).

Figure 2

Proposed Conceptual Framework for Students' Ethical Awareness and Behavior Intentions in theUuse of AI Applications



Source: Author's synthesis based on a review of existing literature (Lin & Su, 2024; Malik et al., 2023;

Irfan et al., 2023; Ali et al., 2024; Kajiwara & Kawabata, 2024; Yu & Yu, 2023; Usher & Barak, 2024; Al-kfairy et al., 2024)

Here, Ethical Awareness in AI Use (behavioral variable influencing ethical behavioural intentions), Behavioural Intentions in the Use of AI (dependent variable representing the outcome of interest), Academic Integrity and AI-Assisted Learning (independent variable reflecting ethical stance), AI and Decision-Making Ethics (independent variable shaping attitudes or subjective norms), and Regulatory and Institutional Influences on AI Ethics (external control variables impacting behavioral intention). These variables highlight the multifaceted nature of ethical decision-making in AI use. Nevertheless, critical questions remain unanswered, such as whether ethical training has a sustained behavioural impact, which strategies most effectively promote ethical AI usage, and how institutional policies shape student behaviour. Addressing these issues is important for developing a culture of right AI engagement in higher education, as emphasised by the framework proposed by Al-Kfairy et al. in the editorial context.

Discussion

The analysis of students' ethical awareness and demonstrated behaviour in using AI tools unearths a complex interplay of various elements that demand special attention. Since AI has highly influenced the educational sector, it is a prime necessity to address ethical implications and assure the liable integration of these technologies. One prominent theme arising from literature is the importance of nurturing ethical awareness among students. Studies have shown that students generally know about ethical issues in using AI, but there's a need to translate this knowledge into ethical behavior. (Hua, 2023). As Ali et al. (Ali et al., 2024) suggest, institutions can play a creative role by conducting an awareness campaign to strengthen ethical considerations and define the limits of unethical practice. (Ali et al., 2024)

Understanding the significant gap lies in the sustainable effect of ethical awareness programmes on students' behaviour (Usher & Barak, 2024). Extensive studies are required to determine whether these interventions build up the way to sustain changes in students' attitudes and actions. Furthermore, research should find out the best strategies for fostering ethical AI use, such as integrating ethics modules into existing courses or offering standalone modules (Hua, 2023). As emphasised in the editor document, institutions must prioritise ethical considerations related to different AI tools. Policies and guidelines of institutions also play a major role in forming students' ethical behaviour. Formulation of clear policies and their effective implementation can help check academic misconduct, promoting the responsible use of artificial intelligence. As the framework by Al-Kfairy et al. suggests, the enforcement of clear policies and guidelines is basic to the ethical use of AI.

Likewise, research techniques in the coming days should incorporate typical samples to increase the universal application of findings. Studies of the cross-culture can facilitate pointing out different cultural factors that influence students' ethical beliefs about AI (Irfan et al., 2023). The effective combination of Artificial Intelligence (AI) in higher academics relies on acknowledging students' perceptions towards AI (Irfan et al., 2023). Various qualitative research methods, like interviews and focus groups, can offer meaningful understandings of students' experiences and views regarding AI ethics. (Ali et al., 2024). Eventually, enhancing students' ethical awareness and responsibly using AI demands a comprehensive strategy that incorporates education, policy, and ongoing research (Hua, 2023). By dealing with the research gaps and seeking the future way suggested in this review, the field can gain better insights into utilizing the optimum benefits of AI, reducing its possible risk factors.

Conclusion

The increasing tendency to integrate Artificial Intelligence (AI) tools in the academic sector has exposed remarkable pedagogical opportunities, simultaneously giving space to different ethical challenges. The main problems with this review are two different situations in which students are becoming more conscious of ethical issues, including academic integrity, data privacy, and algorithmic unfairness. Still, at the same time, they do not have any traits of such awareness in ethical practice. Between their knowledge and behaviour, there lies a noticeable gap from which we can conclude that ethical conduct is shaped not only by knowledge but also by individual attitudes, peer influence, institutional norms, and perceived ease of compliance. As information drawn from the Theory of Planned Behavior (TPB), this study proposes a theoretical paradigm that incorporates the linked influences of

ethical awareness, behavioural intention, academic integrity, and institutional policy. The findings of this review highlight the importance of multi-level strategies spanning ethics-oriented curriculum design, institutional norms, and values, to regulatory policies that are related to context, and culturally attuned regulatory measures. Without explicit guidance and long-lasting ethical discourse, AI may weaken educational goals by encouraging learners to take shortcuts over critical thinking. Therefore, educators, institutions, and policymakers ought to give priority to ethical AI literacy through planned training, good governance, and inclusive discourse. Students' active participation in such discussions makes sure that AI tools are used as auxiliary instruments for learning rather than as a means to replace human intellect. At the end, promoting the trend of ethical responsibility in AI use is a must to protect the integrity and inclusivity of education in the digital era.

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