



Ethical Principles in E-Learning; Investigating Key Issues in Instructional Design and Teaching Methods: A Narrative Review

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ABSTRACT

Background: The expansion of E-learning has brought about new ethical challenges concerning academic integrity, privacy, inclusivity, technological impacts, and power dynamics, necessitating careful examination. This article reviews the literature related to ethical issues in online education to prioritize considerations for instructors and educators.

Methods: A review of 49 articles on E-learning ethics published during 2005-2022 was conducted. Manuscripts were retrieved via Google Scholar, ERIC, and Education Source databases utilizing “online learning ethics,” “e-learning ethics,” “academic integrity,” and “learner privacy keywords. The articles were analyzed using qualitative synthesis.

Results: Key ethical priorities in this study include preserving academic integrity through comprehensive policies, safeguarding learner privacy via data security mechanisms, enhancing inclusivity through design considerations, evaluating technological impacts, and exercising responsible instructor power.

Conclusion: Actively addressing ethical complexities enhances academic integrity in digital classrooms, but sustainable engagement with the evolution of e-learning requires continuous participation. The findings shed light on the responsibilities of online educators in empowering diverse learners.

Keywords: Distance, E-learning ethics, Academic integrity, Learner privacy, Inclusivity

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Introduction

Distance learning has been present for many years, relying on correspondence courses delivered through postal systems (1, 2). The emergence of media and technologies in the 1960s and 70s, such as television and radio-based education, paved the way for new avenues in distance learning (3-5). With the advent of the internet and computer-based learning

management systems in the 1990s and early 2000s, E-learning introduced itself as a form of distance education, providing comprehensive online learning experiences (2, 4, 6). The rapid growth of e-learning at all levels can be attributed to advancements in online learning technologies and the necessity of remote education due to the global impact of COVID-19 (7, 8). This surge in e-learning and virtual

education has opened up new opportunities for flexible and accessible learning (9).

However, this transformation has also raised ethical considerations for educators and instructional designers, requiring careful examination (10, 11). Teaching and facilitating learning in virtual spaces raise concerns about academic integrity, content ownership, learner privacy, assessment methods, inclusivity, ethical use of technology, and power dynamics in instructor-learner interactions (12-15).

Adhering to ethical principles in virtual education can yield multiple beneficial outcomes for learners, educators, and the broader research community (9). Prioritizing learner privacy and data security may lead to a greater sense of comfort for participants in digital classrooms, especially as virtual environments increasingly surpass traditional face-to-face teaching methods (7).

Transparency regarding emerging technologies can assist instructors and institutions in making more informed choices to support learners' success (16). Online anonymity can, however, encourage misconduct without facing immediate consequences (17). Additionally, reliance on technology exacerbates risks related to data privacy violations, security breaches, and unethical use of learners' personal information (14). Moreover, dependence on digital platforms raises concerns about access, inclusivity, and educational equity for learners without reliable internet access (18, 19). Lastly, the rapidly evolving nature of virtual environments means that new ethical challenges continuously emerge (20).

Learner engagement in virtual classes is a significant advantage of online education (21). Nevertheless, as virtual spaces replace physical classrooms, existing ethical norms are challenged (20). Preserving academic integrity and honesty in e-learning environments is a key priority (22). It is essential to recognize that e-learning entails specific requirements and principles for instructors and educators (23, 24). Comprehensively addressing these ethical obligations fosters integrity and credibility in

online research and educational practices, ultimately impacting the real world (25).

There is a review article published by Antonella Esposito in 2012 investigated ethical issues related to conducting virtual research in massive open online courses (MOOC). He emphasizes the necessity of paying attention to the participants' privacy, obtaining informed consent from them, and maintaining the identity and anonymity of the volunteers. It also emphasizes the importance of the researcher's role as an active participant (26).

Another review article was published by Bill Anderson and Mary Simpson in 2007. The authors have investigated ethical issues in virtual education. They emphasize the importance of paying attention to justice and equality in access to virtual education, protecting students' privacy and obtaining informed consent from them (27).

Elif Toprak and colleges published an article on ethics in ELearning at 2010. The authors have investigated the views of students and professors on ethical issues in e-learning. They emphasize the need to inform students about ethical rules, protect their privacy, and obtain consent from students (28).

In another study, Dimitrios Tzimas and Stavros Demetriadis have investigated ethical issues related to analytical learning in 2021. They emphasize the necessity of respecting students' privacy, transparency in the use of data and algorithms, and avoiding the classification and labeling of students (29).

Although virtual education has many advantages, including flexibility and easy access (7), there are also ethical challenges in this area. According to recent research, students' violations of virtual exams and assignments have increased by about 20% during the Covid-19 era (30). In addition, there are concerns about the privacy of students and the security of their information in the virtual environment (14). Also, the limitation of access to the Internet and technology for low-income students, the lack of physical presence of the lecturer, and the reduction of human interactions are among other challenges. Virtual education is considered (10).

According to these challenges this article focused on e-learning and examines educators' responsibilities in promoting ethical education within digital learning environments and its various aspects. In this study we aimed to find the answer of following questions:

What are the key ethical challenges in virtual education?

What are the moral responsibilities of teachers and educational designers in the virtual environment?

How can ethical principles and standards be guaranteed in virtual education?

Methods

This review was conducted based on the literature research published during the last 15 years (2005-2022) regarding ethical issues in e-learning and online education. This 15-year period was chosen to cover contemporary research that aligns with the digital transformation accompanied by the emergence of new learning technologies and platforms.

Database searches were performed on Scopus, Google Scholar, ERIC, and Education Source, using a combination of keywords including "online learning ethics," "e-learning ethics," "academic integrity," "learner privacy," and related phrases.

Inclusion criteria focused on full text English-language publications in the field of higher education published in peer-reviewed academic journals or conference proceedings. Exclusion criteria consisted of research without empirical or theoretical analysis.

Studies solely focused on traditional face-to-face learning were excluded due to their lack of relevance. After screening titles, abstracts, and keywords for alignment with the research objectives.

For analysis of the retrieved manuscripts, three experts analyzed the full text of the articles based on the Prisma checklist. A narrative approach was used to categorize ethical issues, compare findings, and synthesize results related to the responsibilities of online instructors and instructional designers. The sources provided primary evidence across

various fields to minimize bias and offer a transparent analytical framework.

Results

The initial searches yielded over 250 articles, after applying the inclusion and exclusion criteria, 49 articles met the criteria for review and full-text analysis. Out of 49 reviewed articles, seven key ethical priorities were exploited as preserving academic integrity through comprehensive policies, content ownership, safeguarding learner privacy via data security mechanisms, enhancing inclusivity through design considerations, evaluating technological impacts, exercising responsible instructor power, and designing assessment and evaluation of learner (Figure 1).

In order to analyze the data and extract the main themes related to ethical issues in e-learning, thematic analysis method was used. By carefully studying the texts, the researchers first extracted the related concepts and themes. Then, by comparing these concepts, more comprehensive classes and themes were formed. Finally, the themes were categorized in the form of the following main axes:

Academic Integrity in E-learning

Upholding academic integrity is a vital ethical priority in e-learning. Digital environments can facilitate new forms of cheating, such as identity forgery, unauthorized collaboration, and inappropriate file sharing (31-33). Instructors have the responsibility of mitigating misconduct risks through appropriate assessment designs, honor codes, and supervision (34-36). Active integrity policies and honor codes may reduce cheating behaviors in online classes and foster integrity norms (37, 38). Instructors should clearly communicate their expectations, verify learners' identities, and use technologies like plagiarism detectors to maintain academic coherence and integrity (25, 39). Random and fair assessments, as well as online proctored exams, can also enhance academic integrity (40, 41).

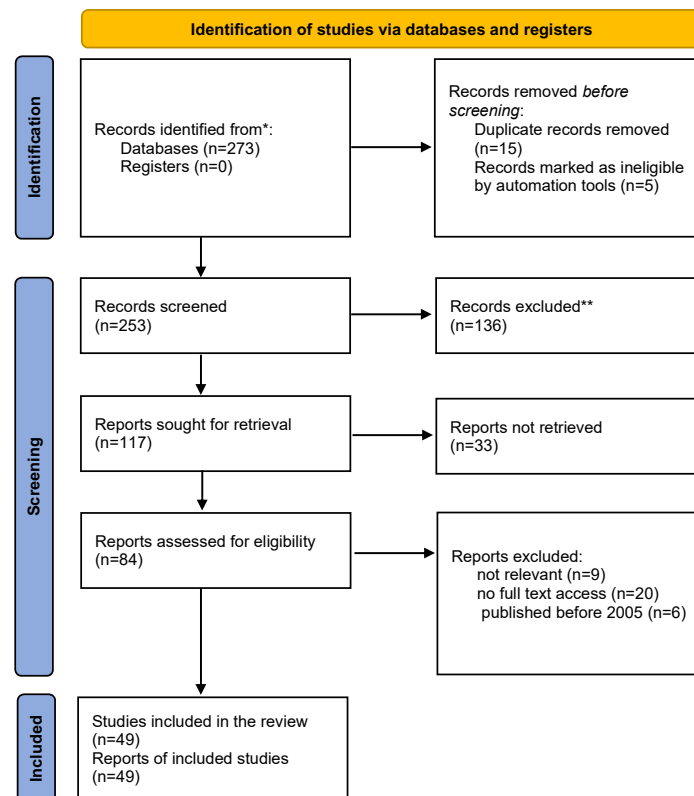


Figure 1: Prisma flow diagram of the study.

1. Content Ownership and Intellectual Property:

In e-learning, educators often manage or remix third-party content. This raises ethical issues concerning appropriate attribution and respect for intellectual property rights (34, 42, 43). To prevent plagiarism, all included content must have legal permission and proper citation. Fair use principles allow limited educational use of copyrighted materials. Clear policies regarding content ownership and original work help prevent conflicts over intellectual property rights in online classes (42, 44). Discussing issues related to ownership, licensing, and fair use encourages more creative and ethical consumers of content (38, 45, 46).

2. Learner Privacy and Data Security:

Protecting learner privacy and data is an essential ethical priority. Increased data collection in online learning raises risks of identity, demographic, behavioral, and performance disclosures (47, 48). Encryption, access controls, and data minimization help mitigate risks (48, 49). Data usage policies

should be transparent, and informed consent should be obtained for data collection and research purposes (14, 49). Instructors must secure learners' personal information and interactive data against unauthorized access or exploitation. Periodic audits ensure organizational learning systems and educational programs comply with best security practices (14, 49, 50).

3. Inclusivity and Diversity:

Inclusive and non-discriminatory learning environments are ethical necessities (50, 51). Course design choices and technologies should minimize barriers faced by learners with disabilities or socio-economic disadvantages (12, 50). Content review helps eliminate biases or stereotypes that misrepresent learner groups and fosters cultural inclusivity (52, 53). Accessibility accommodations for disabilities, asynchronous participation options, and language support promote inclusivity (12, 50, 52, 54). Mentorship and creating a learning community contribute to the acceptance of online class culture (55) and increasing access through facilitation,

flexible participation options, and assistive technologies (50, 56, 57).

4. Ethical Use of Learning Technologies:

Ethical use of new tools like artificial intelligence, automation, and augmented reality requires evidence-based evaluation focusing on risks to privacy, fair access, and physical or emotional well-being (58-61). Automated systems like AI teachers demand transparency, bias checks, and human oversight (61-63). Immersive technologies necessitate protections against physical and emotional risks (60, 61, 64). Analyzing the use of such technologies requires balancing learning benefits and privacy risks (14, 49). Learner priorities and preferences should take precedence over mere technological capabilities when implementing novel tools like AI, virtual reality, and learning analytics (65, 66).

5. Instructor-Learner Interactions and Power Dynamics:

Natale and Doran defined power dynamics as follows: "Power dynamics in educational contexts refers to the power and influence that educators exert over learners through subject mastery, monitoring of learning processes, control over grades/assessments, and other mechanisms" (67). Instructors inherently possess authority, expertise, and grade control, which should be exercised responsibly (55, 68, 69). Healthy instructor-learner interactions and balanced power dynamics are fundamental to ethical e-learning. Clear communication policies and expectations facilitate respectful discussions. Instructors must maintain transparent professional relationships, amplify learner voices, and prevent misuse of power (68, 70). Building caring yet professional relationships reduces the risks of online isolation (54, 55). Modeling constructive discourse dynamics helps combat toxic digital conversations (70-72). Adhering to these principles facilitates learning while overlooking them poses risks (55, 73).

6. Assessment and Evaluation of Learners:

Designing a fair assessment is an ethical commitment in e-learning (74, 75). Rubrics,

anonymous grading, and compatible criteria aid in ensuring fairness (76, 77). To prevent bias, learners' identities should remain anonymous during automated grading (41, 78). Assessments must align with stated educational objectives and outcomes to provide meaningful evaluations (75, 77). Offering flexible options, feedback opportunities, and transparency in decision-making preserves ethical standards (77, 79).

Discussion

This review article analyzes studies on key ethical issues in the field of e-learning to highlight priorities for online educators. The findings provide insights into areas related to academic integrity, privacy, inclusivity, emerging technologies, power dynamics, intellectual property, and fair assessment design.

The results emphasize academic integrity and honesty as essential ethical requirements in virtual environments, where risks of cheating, unauthorized collaboration, identity forgery, and inappropriate content sharing may increase compared to traditional physical classrooms (25, 33). Implementing comprehensive codes of honor and academic honesty policies indicates a vital preventive strategy by establishing formal and serious consequences for violations (37, 38). Precise assessment design, proactive identification of literary theft, identity verification during critical phases, and academic monitoring mechanisms foster a more supportive framework (25, 33). Beyond policies and controls, fostering a culture of honesty relies on communication and emphasis on expectations, modeling, learning moments arising from misconduct, and collaborative policy development by incorporating learners' perspectives (37, 38). Continuous alignment of multidimensional strategies to protect integrity is crucial as risks evolve alongside emerging technologies and platforms.

The development of educational materials and online experiences often involves the integration or remixing of pre-existing third-party content. Therefore, ethical

considerations, such as proper attribution, citation, ensuring permissions, and respect for original ownership, are vital (42). Educators should obtain legal permission for any external content used, adhere to fair use principles for limited educational application of copyrighted works, and provide complete referencing for all cited ideas to prevent plagiarism (43). Transparent course policies that elucidate intellectual property rights, expectations for original content, and content licensing parameters aid in avoiding ownership conflicts and help establish clear instructor guidelines (42, 44). However, it is equally important to explicitly address consumers and creators of educational content, i.e., learners, by instructing them in documenting practices, fair use, copyright concerns, and the risks of literary theft (38, 39). Incorporating ethical modeling and content nurturing equips learners with vital skills for the digital age.

Collecting, analyzing, and storing extensive learner data raises significant ethical concerns about privacy and security. Emerging concerns include learner profiling based on learning behaviors, demographic-related topics, identity, disabilities, or other factors (14, 47). Technical controls such as data encryption, multi-factor authentication, strict access restrictions, data anonymization, and minimizing access demonstrate frontline protections (49). Privacy should be safeguarded through informed consent requirements that clearly delineate data usage boundaries, withdrawal policies, and strict limitations in secondary research programs (14). Regular auditing of data systems, access reports, and monitoring mechanisms ensure compliance (47). However, even robust privacy protocols require ongoing evaluation as technologies and data applications evolve rapidly.

Online learning communities must exemplify inclusivity, diversity, and accessibility. This begins with educator modeling of respectful discourse, enforcement of behavioral codes, and fostering classroom cultures where all perspectives are valued (21). Course design choices indicate another potent

mechanism, ranging from employing universal design principles for inclusive facilities from the outset to providing multi-faceted and flexible participation options to accommodate various needs and limitations (51, 52). Content review helps identify and reduce biases, stereotypes, or language that marginalizes or misrepresents specific groups (53). Providing language support, anonymous options, and identity protection can promote inclusivity (57). Although expanding participation remains an ideal challenge, progress should be pursued through targeted and comprehensive efforts to overcome barriers.

New technologies hold transformative potential but also come with risks that require ethical evaluation. Artificial intelligence, automation, augmented reality, and other tools promise enhanced education and learning opportunities, but concerns about privacy preservation, security, equitable access, unintended tracking, and dehumanization are also raised (58, 59). Responsible implementation necessitates an evidence-based assessment of impacts on rights, well-being, autonomy, and inclusivity to ensure that benefits outweigh potential harms (66). Learner interests and perspectives, not just technical capabilities, should guide decision-making (65). Continuous monitoring and refinement are essential as technologies and applications rapidly evolve.

The authority of educators arising from subject expertise, curriculum control, and classroom discussions carries the risk of power abuse or misuse if boundaries blur (73, 80). This situation calls for ethical management of relationships, preventing inappropriate or intimate disclosures, avoiding discrimination, fostering constructive dialogue spaces, attending to learners' needs, and refraining from reinforcing power dynamics through technology (68). Power, when used rightly, promotes growth; when misused, it causes harm. Awareness of relational dynamics and modeling ethical communications prevent educators from becoming absolute authorities.

Fair, valid, and inclusive assessments demonstrate a fundamental ethical

commitment (74). Rubrics, anonymous grading, and transparency about methods and reasoning aid in ensuring fairness (76). Universal design principles actively make assessments more accessible from the outset (52). Balancing learning benefits with stereotypical risks requires careful analysis (78). Adjustable options to meet individual students' needs necessitate better support (65). Above all, co-designing assessments to align with shared goals, competencies, and learning activities promotes equitable student engagement (75). Assessments rooted in shared objectives foster motivation for improvement.

Educators, by conscientiously and courageously addressing these ethical dimensions in an interconnected manner with care and effort, support the principles of social justice, diversity, privacy, and compassionate education. While solutions may encounter resistance, progress in addressing these hidden challenges is attainable.

Conclusion

As online and virtual education rapidly expands, adhering to ethical standards becomes essential to protect learners and maintain academic integrity. This article combines key ethical priorities that educators, designers, institutions, and the educational community as a whole must actively address. The most critical aspect is preserving academic integrity in digital environments, where the risks of cheating evolve. Comprehensive integrity policies, honor codes, assessments designed to minimize misconduct, detecting plagiarism, and verifying essential identity are crucial. Likewise, respecting content ownership and intellectual property through appropriate licensing, attribution, and promoting learners' content literacy is highly important.

Ensuring learners' privacy requires commitments such as encryption, access controls, consent requirements, minimal data collection, and auditing to secure identities, demographics, behaviors, and performance. Empowering diverse online learning

communities necessitates designing globally accessible courses, combating biases, offering accommodations, and embracing diversity.

The ethical acceptance of emerging technologies in evidence-based evaluations depends on a focus on risks, fair access, welfare implications, and learner agency. Balancing the benefits of learning analytics and privacy protection is highly important. Conscientious management of power dynamics requires preserving boundaries, building community, constructive modeling, and preventing abuse. Fair assessment calls for rubrics, anonymity, alignment with objectives, flexible options, transparent procedures, and bias awareness.

Throughout these interconnected dimensions, online educators and designers' shoulder profound ethical responsibilities but also have opportunities to demonstrate integrity. As virtual education continues to evolve, a sustained commitment to ethical considerations is crucial for empowering learners. While no single article or study can comprehensively cover all aspects, this review amalgamates insights from previous research to highlight priorities at the intersection of education and technology. Active engagement with ethical complexities allows educators to fulfill their commitment to empowering learners in digital learning environments. Continuous scrutiny of evolving tools and methodologies is essential to actualize ethical e-learning at scale.

To uphold ethics in e-learning, the following important recommendations can be proposed:

Development of Ethical Policies and Codes: Establishing clear and explicit ethical policies and codes for educators, designers, and educational institutions to adhere to ethical standards and protect the rights of learners is essential.

Ethical Training for Educators: Providing educators with training on ethical principles in e-learning and methods to protect learners' privacy to promote ethical behavior and responsibility is crucial.

Enhancing Transparency and Equity: Promoting transparency in assessment and

grading processes, creating fair rubrics, and criteria aligned with educational objectives help learners better understand the assessment process and achieve fair evaluation.

Privacy Protection: Taking necessary actions to safeguard learners' privacy and personal information, such as encryption, access controls, and informed consent forms, ensures data protection.

Proper Communication: Informing learners about their ethical rights and responsibilities, ethical policies and codes, and methods to protect their privacy ensures they are fully aware of these aspects.

Attention to Diversity and Learner Intensity: Paying attention to the diverse needs and perspectives of learners, creating learning environments that suit learner diversity, and providing necessary support for vulnerable groups are essential.

Continuous Evaluation and Updates: Regularly evaluating evolving tools and methods in e-learning and updating ethical policies and codes to adapt to technological changes and protect learners are of great importance.

Focus on Educator-Learner Interactions: Establishing respectful and dignified relationships between educators and learners, transparently managing power dynamics, and providing effective feedback opportunities to learners are crucial points in ethical interactions between designers and learners.

Support for Ethical Awareness: Creating opportunities for learners to be educated on ethical principles and ethical issues related to e-learning to promote participation and communication among learners is important.

By following these recommendations and prioritizing ethical considerations, e-learning can become an effective and ethical tool in empowering and enhancing the knowledge and education of learners worldwide.

Limitation and Suggestions

Although this study, tried to identify and review articles related to the topic by carefully checking the databases, this research has also faced some limitations. First, the search

for articles was not done systematically and based on a specific protocol. In addition, only articles published in English were reviewed. Studies and reports may have been published in other languages regarding the ethical issues of e-learning, which were not included in this study. Also, due to limited access, it was not possible to review all related full texts. It is suggested that in future studies, systematic search methods should be used and language restrictions should not be considered so that the findings are more comprehensive.

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Authors' Contribution

All authors (AM, ZZ, YH and NZ) conceptualized the study, and all were major contributors to writing the manuscript. AM performed the literature search, in consultation with NZ, assisted with ZZ and YH. AM, ZZ, and YH provided writing and critical revision of the manuscript. NZ has supervised the process. AM, ZZ performed critical revision of the manuscript. All authors approved the final manuscript.

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