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INTEGRATING ETHICAL ARTIFICIAL INTELLIGENCE IN SECONDARY EDUCATION: A FRAMEWORK FOR RESPONSIBLE DIGITAL PEDAGOGY

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Abstract

The rapid development of artificial intelligence has brought significant transformations in the education sector, including secondary education. However, the adoption of AI without a clear ethical framework has the potential to pose risks, ranging from algorithmic bias to violations of student data privacy. This study aims to formulate a framework for responsible digital pedagogy by integrating AI ethical principles into secondary education practices. Through a literature review method, this study examines theories, policies, and global best practices related to AI ethics and its use in learning contexts. The results of the study identify five main elements in the ethical digital pedagogy framework: algorithmic transparency, data protection, access equity, ethical digital literacy, and teacher involvement as critical facilitators. This study emphasizes the need for collaboration between policymakers, educators, and technology developers to create a safe, fair, and socially responsible learning environment in the digital era. This framework is expected to be a reference in the formulation of humanistic AI-based education policies and curricula at the secondary school level.

Keywords: artificial intelligence, AI ethics, secondary education, digital pedagogy, digital literacy, education policy

INTRODUCTION

The rapid advancement of digital technology in the last two decades has given birth to various significant transformations in various sectors of life, including in the world of education. One of the technological innovations that is now starting to be widely applied in educational environments is artificial intelligence. AI not only brings changes in the way students learn and teachers teach, but also opens up great potential in personalized learning, data-based

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classroom management, and adaptive evaluation of learning outcomes (Flores-Viva & García-Peñalvo, 2023). However, behind these positive potentials, there are deep concerns about the ethical implications of implementing this technology, especially among adolescent students such as those at the senior high school level. Senior high school is a critical phase in the cognitive, social, and moral development of students. At this age, students begin to develop a more complex self-identity, face increasing academic pressure, and begin to form a critical view of the world around them. In this context, the presence of AI in classrooms should not be understood merely as a learning aid, but as a digital entity that can influence the way students think, behave, and shape their values (Nurhasanah & Nugraha, 2024). Therefore, it is important to ensure that the integration of AI in secondary education is carried out ethically, oriented towards strengthening character, and does not violate the principles of human rights, privacy, justice, and inclusivity.

In practice, the application of AI in education is still marked by various challenges. On the one hand, there is admiration for AI's ability to analyze big data, detect student learning patterns, and provide learning recommendations tailored to individual needs. On the other hand, there are concerns that the use of AI can deepen educational inequality, ignore local socio-cultural contexts, and create unconscious algorithmic bias. There are many cases where AI systems used in education contain gender, racial, or economic biases that indirectly influence the educational decision-making process, from achievement assessments to recommendations for further educational paths. This is a warning that the use of sophisticated technology must be balanced with high ethical awareness and a responsible pedagogical approach.

In the Indonesian context, the integration of digital technology in education is accelerating, especially after the COVID-19 pandemic which has driven massive digitalization of the teaching and learning process. The government, through various policies such as Merdeka Belajar, as well as school digitalization initiatives, has shown its commitment to bringing the national education system into the digital era. However, not much attention has been paid to the ethical aspects of the use of these technologies, including AI. In fact, the existence of AI in the education system must be guided by a clear ethical framework so as not to have a negative impact on the development of students. Within this framework, the development of guidelines or frameworks for ethical AI integration is very urgent, especially for the upper secondary education level which is strategically at a critical point

in the formation of a young generation that is both digitally competent and has integrity (Chen, 2024).

The framework for responsible digital pedagogy with ethical AI integration must encompass multiple dimensions. First, the dimension of digital awareness and literacy that emphasizes the importance of students' understanding of how AI works and its impact on their lives. Second, the dimension of data protection and privacy, where students as users of technology must have their rights protected from misuse of personal data. Third, the dimension of inclusivity and fairness, which ensures that all students benefit from technology without experiencing algorithmic discrimination. Fourth, the dimension of critical participation, which provides space for students to not only be passive users of technology, but also to become subjects who are able to assess and criticize the role of AI in their lives. And finally, the dimension of ethical pedagogy, which emphasizes the importance of human values in technology-based learning processes (Kayal, 2024). Research on ethical AI integration in secondary education is also important to address the needs of future curricula. The educational curriculum is no longer sufficient to only contain cognitive competencies such as literacy and numeracy, but must also include digital competencies, critical thinking skills, and ethical abilities in interacting with technology (Nguyen et al., 2023a). By building an ethical digital pedagogy framework, senior secondary education can become a strategic space to instill the values of digital responsibility from an early age, while preparing a young generation who are not only academically superior, but also wise in using and developing technology.

As part of the global effort to shape the ethical direction of AI development, many international institutions such as UNESCO, OECD, and the European Commission have developed ethical guidelines for AI in education (Airaj, 2024). However, these frameworks are still very general and have not been fully adapted to the educational context in developing countries such as Indonesia. Therefore, this research is important to design a framework that is not only normative, but also applicable and relevant to the needs and challenges of senior secondary education in Indonesia. This research can also be an academic and practical contribution to bridging technological innovation and social responsibility in 21st century education (Okada et al., 2025).

Thus, this study aims to develop a comprehensive and contextual framework for integrating AI ethically into digital pedagogy at the senior secondary education level. This framework is expected to be a reference for

educators, policy makers, and educational technology developers to design AI integration strategies that are not only effective in terms of learning, but also uphold human values. With this approach, high school education can transform into an arena for forming a generation that is not only technologically proficient, but also wise, critical, and ethically responsible in the ever-evolving digital era.

RESEARCH METHOD

The research method used in this study is a literature review, which aims to collect, analyze, and synthesize various scientific sources related to the ethical integration of artificial intelligence in secondary education. This method was chosen because it is relevant in exploring theoretical concepts, pedagogical approaches, and ethical dimensions that have been discussed in various previous studies. This study relies on academic literature such as scientific journals, conference proceedings, reference books, and policy reports from international institutions, with a publication period of the last ten years to ensure the recency and relevance of the information studied.

The data collection process was carried out through a systematic search in several leading databases such as Scopus, Web of Science, Google Scholar, and ERIC. The keywords used in the search process include "ethical artificial intelligence", "secondary education", "responsible digital pedagogy", "AI integration in schools", and "AI in education ethics". Furthermore, the literature found was selected based on inclusion criteria such as topic relevance, methodological quality, and contribution to the development of a conceptual framework on responsible digital pedagogy. The analysis process was carried out with a thematic approach to identify patterns, principles, and key challenges in the application of ethical AI in secondary education environments.

The results of this literature review will be used to build a conceptual framework that can be used as a basis for designing ethical AI integration strategies in high schools. By integrating findings from various sources, this study aims to provide theoretical and practical guidance for educators, policy makers, and educational technology developers. The resulting framework is expected to be able to balance the potential of AI technology with ethical values of education, such as fairness, transparency, inclusivity, and digital responsibility, in order to create an adaptive learning environment that is oriented towards character development and students' digital literacy. Data analysis was carried out using a thematic approach, where various literature

findings were grouped based on key issues such as the impact of genetic variation on nutritional responses, the effectiveness of personalized nutritional interventions, challenges of implementation at the population level, and the potential for nutrigenomic integration in public health policies. Through this approach, the study is expected to be able to produce a comprehensive and critical synthesis of knowledge on how genetic insights can be bridged with effective nutritional strategies to improve the health status of the community at large.

RESULT AND DISCUSSION

The Role and Potential of AI in Learning in High School Education

The development of artificial intelligence has brought significant changes to the world of education, especially in the context of personalized learning, assessment, and the transformation of the role of teachers in the classroom. AI as a tool in personalized learning opens up new opportunities to create learning experiences that are more relevant, adaptive, and responsive to the needs of each student. Traditional learning systems that are uniform for all students often ignore differences in learning styles, abilities, and backgrounds of students. In this context, AI is able to offer more individual solutions by providing materials, assignments, and learning resources that are tailored to the strengths and weaknesses of each student based on data obtained in real time. AI technology can recognize student learning patterns through digital interactions, then recommend optimal learning paths so that the learning process becomes more meaningful and effective (Lu & Fan, 2023).

With the application of AI in the education system, teachers can access in-depth analytical data related to student development. AI can provide detailed information on learning achievement, level of understanding of the material, and difficulties faced by students in the learning process. This information is the basis for teachers to provide appropriate interventions at the right time, either in the form of additional explanations, remedial exercises, or concept reinforcement. Moreover, AI can also facilitate interest-based learning by recommending content that suits students' interests, such as interactive videos, simulations, or problem-based projects that are relevant to the real world (Lu & Fan, 2023). Thus, AI not only makes it easier for teachers to manage differentiated learning but also encourages students to be more active, independent, and deeply involved in their learning process. In addition, AI plays an important role in assessing and measuring student competencies more holistically and accurately. In the traditional approach,

assessments tend to rely on written tests that only measure a small part of the expected competency spectrum, especially cognitive ones. AI enables the development of data-based formative and summative assessments that cover various dimensions of competency, including critical thinking, collaborative, creative, and communication skills. Through the analysis of students' interactive behavior during digital learning, the AI system can continuously measure their progress and provide instant feedback. AI-based adaptive assessments also allow questions or challenges to be dynamically adjusted to students' ability levels, making the assessment experience fairer and more in-depth (Baksa et al., 2024). Furthermore, AI can also detect competency gaps and design specific improvement strategies for each student. In practice, this technology helps teachers not only evaluate the final learning outcomes but also understand the student's learning process as a whole. This has the potential to improve the quality of education because it allows assessments that not only assess but also support learning growth. However, it is important to ensure that the use of AI in assessments continues to uphold the principles of fairness, privacy, and transparency. Data-based decision-making must remain guided by ethical values and take into account the social and psychological context of students, so that there is no bias or unequal treatment.

The significant transformation brought by AI in education certainly has an impact on the role of teachers and overall classroom dynamics. AI does not replace the role of teachers, but instead changes the way teachers work, from conveying information to facilitators, mentors, and guides for students' learning processes. In a digitalized classroom environment, teachers are required to be able to use data and technology as a basis for making effective pedagogical decisions. Teachers also need to develop new skills in interpreting learning analytics, utilizing AI-based platforms, and designing learning experiences that remain humanistic even though they are technology-based. The classroom is no longer a passive place, but has changed into a dynamic and collaborative learning ecosystem, where interactions between students, teachers, and machines complement each other (Lee & Perret, 2022). Another impact is that social interactions in the classroom have also changed. Although

AI can help speed up administrative processes, provide automatic feedback, and streamline classroom management, aspects of empathy, interpersonal relationships, and emotional support remain important domains that can only be done by humans. Teachers have a central role in maintaining an inclusive classroom atmosphere, fostering moral values, and shaping

students' character in the midst of a digital era that tends to be individualistic. Therefore, AI integration must be placed within an ethical and responsible pedagogical framework, where technology complements and empowers, not replaces humans (Adiguzel et al., 2023). It is also important to consider the social impacts of AI use on classroom dynamics, such as the possibility of inequality in access to technology, challenges in maintaining students' divided attention, and potential dependence on automated systems. Therefore, the success of AI integration in education is highly dependent on teacher readiness, inclusive education policies, ongoing training, and equitable infrastructure support. Collaboration between educators, technology developers, and other stakeholders is needed to ensure that AI is used to strengthen human values in the learning process, not to weaken them. In the era of artificial intelligence, the role of teachers is becoming increasingly important as guardians of the direction and meaning of education that humanizes humans.

Ethical Framework for AI Integration in Digital Pedagogy

In facing the digital era marked by the penetration of Artificial Intelligence technology into learning spaces, secondary education is faced with an urgent need to integrate AI ethically. The use of this technology in the realm of education is not solely related to efficiency or improving learning outcomes, but also concerns moral values and social responsibility (Celik, 2023). Therefore, ethical pillars such as transparency, accountability, fairness, and inclusivity are fundamental foundations that must be upheld in every application of AI in the school environment. Transparency requires openness to how the AI system works, the types of data collected, and how decisions are made by the system. When students, teachers, and parents understand the process behind the technology used, they will feel more confident and able to criticize its use. This is important to build a healthy relationship between technology and the education community.

In addition, accountability is key to ensuring that all actions involving AI in education have a responsible party. AI technology used to assess student performance or provide learning recommendations must have mechanisms that allow for tracking and correcting possible errors. This requires a system that not only facilitates regular evaluation of the technology but also allows for ethical reporting and problem solving. Meanwhile, the principle of fairness must inspire every algorithm applied so as not to create or reinforce biases that can harm certain groups. When adaptive learning systems, for example,

are used to recommend learning paths, it is important to ensure that the algorithm does not exclude students from certain backgrounds because of social or economic variables that are unconsciously included in the system (Obidovna, 2024). In other words, fairness in educational AI requires equal treatment and fair opportunities for all students. The principle of inclusivity is also an inseparable element. AI must be designed to be able to reach and serve all types of student needs, including those with disabilities, limited access to technology, or from historically marginalized groups. Truly inclusive education does not only provide technology, but also ensures that the technology can be used effectively by all parties. Therefore, AI in education must go through a participatory design process that invites input from various user groups. This will ensure that the AI developed and implemented truly reflects the diversity of the school community and does not ignore any group in the learning process (Khan, 2024).

To ensure that all these ethical principles can be implemented consistently, the role of education regulation and policy is crucial. The state has the responsibility to create a legal framework and guidelines that govern the use of AI in the education system nationally. Without clear regulations, the use of AI in schools could potentially lead to inequality, data privacy violations, and even information manipulation. Public policy must establish ethical standards, guidelines for data use, and procedures for evaluating and auditing the technology applied. Furthermore, adaptive and progressive regulations are also needed to keep up with the rapid development of technology, while maintaining the values of humanity and justice in education.

In addition, regulations also play a role in creating a balance between innovation and protection, namely by encouraging the development of local technology that is in accordance with the cultural and social context of Indonesian society, without sacrificing universal global ethical principles. Amidst the complexity of these challenges, collaboration between various stakeholders is very important to ensure that the integration of AI in high school education can run ethically and sustainably. The government as a policy maker must work with schools to provide infrastructure, training, and an evaluation framework that supports the responsible use of AI.

Schools and educators have a strategic role in translating these policies into learning practices that are in accordance with the characteristics of students. On the other hand, technology developers and AI providers need to involve educators, students, and the community in the system design and testing process, so that the resulting product is truly relevant to educational

needs. This collaboration is also important to ensure that the technology created is not only sophisticated, but also humane and contextual (Papakostas, 2025). In addition, civil society including parents, academics, and non-governmental organizations can be important actors in monitoring and providing critical input on the implementation of AI in schools. Public involvement will strengthen social control over the process of digitizing education and avoid top-down technological dominance. Through open and participatory dialogue, various parties can build consensus on the limitations and opportunities for the use of AI in the classroom, so that there is no dominance of power by one party. In this era of digital transformation, education is not only a field of learning, but also an arena for the struggle for ethical and humanitarian values. Therefore, multi-party synergy in designing and implementing AI in schools is an absolute step to create a fair, transparent, accountable, and inclusive education ecosystem.

Case Studies and Good Practices of Ethical AI Integration in Education

The application of artificial intelligence in secondary education has become a global phenomenon that affects the way teachers teach and students learn. Developed countries such as Finland, South Korea, Japan, and Canada have pioneered the systematic application of AI in school settings, emphasizing the importance of an ethical framework that protects students from the risks of data misuse, algorithmic bias, and technology dependency. In Finland, for example, the Elements of AI program designed to introduce basic concepts of artificial intelligence has been adapted into the high school curriculum with a humanistic approach. This approach positions students as active, critical users of AI, rather than passive consumers. They are taught to understand the logic of AI systems, question how algorithms work, and be aware of their potential impacts on personal and social lives. The principles of transparency, privacy, and accountability are integral to teaching (Osman & Ahmed, 2024).

In South Korea, the use of AI in personalized learning has received great attention. AI systems are used to monitor students' progress and provide learning recommendations tailored to their learning styles. However, this approach is accompanied by strict ethical oversight policies. Local governments and schools ensure that student data is only used for educational purposes and does not violate individual privacy. The role of teachers remains vital as companions and evaluators in the teaching and learning process integrated with AI technology, in order to avoid moral

disorientation or loss of healthy social interactions. This shows that the success of AI implementation in developed countries depends not only on the technology itself, but on the ethical ecosystem that supports its use (Nur et al., 2024). In contrast, in developing countries such as Indonesia, India, and Kenya, the implementation of AI in secondary education still faces complex structural and ethical challenges. In several urban private schools in Indonesia, AI-based adaptive learning technology has begun to be implemented to support mathematics or English subjects. However, not all schools have adequate technological infrastructure, and ethical approaches to AI have not been fully internalized in the curriculum or policies. In India, the AI for Youth project supported by the government and multinational technology industries has provided training to secondary school students on how to use AI creatively and ethically. While this program is promising, there are concerns about inequity in access, lack of in-depth digital ethics training, and possible corporate influence on the direction of education.

From various studies and field reports, it can be learned that the success of implementing AI in education is greatly influenced by the alignment between technology, policy, and school culture. Countries that have successfully implemented ethical AI in secondary education generally have a strong institutional commitment to protecting students' rights. They form digital education ethics councils, develop pedagogical guidelines that are aligned with human values, and involve active teacher participation in the technology evaluation process (Schiff, 2022). Failure occurs when AI is implemented hastily without a thorough understanding of its ethical implications. For example, in several regions in the United States, the use of AI-based proctor software to monitor students during exams has caused controversy because it was considered to violate privacy, discriminate against minority groups, and trigger excessive anxiety in students. An important lesson from this failure is that a technocratic approach to education must be balanced with ethical foundations and psychosocial awareness. Evaluating the effectiveness of an ethical approach to digital learning requires indicators that cover pedagogical, psychological, and social aspects. An ethical approach is not only seen from the absence of privacy violations or bias, but also from how AI can strengthen students' learning autonomy, encourage critical thinking, and create an inclusive learning space. Evaluations in Canadian schools show that when teachers are involved in the design and oversight of AI systems, students are more motivated and feel safer interacting with technology. This success is supported by adequate teacher training and a

digital ethics curriculum that is integrated into learning. In contrast, approaches that focus solely on efficiency or data processing tend to fail to achieve deeper learning goals, because they ignore the relational aspects of education.

In developing countries, evaluation of the effectiveness of ethical approaches is still limited due to the lack of assessment instruments and contextual frameworks. Despite efforts by NGOs and international institutions to encourage the implementation of ethical AI, implementation in the field is still inconsistent. Integration between national education policies, ongoing teacher training, and student and parent involvement in building ethical awareness of the use of AI is needed. Qualitative evaluations conducted in several schools in Africa show that students who are involved in discussions about AI ethics tend to better understand the social consequences of technology use, and are more critical in responding to digital information. This indicates that ethical approaches can substantially improve digital literacy if applied in a dialogically and contextual manner (Nguyen et al., 2023b).

Thus, the experiences of countries in adopting AI in secondary schools underscore the importance of a holistic and adaptive ethical approach. AI is not a single solution to educational problems, but rather a tool that must be guided by human values and principles of responsible pedagogy. The integration of AI in secondary education must be accompanied by a commitment to transparency, inclusivity, and equity, in both developed and developing country contexts. By reflecting on the successes and failures of implementation in different settings, schools and governments can shape more thoughtful policies and practices in building an ethical and sustainable digital education future.

Ethical Competency Strengthening Strategy for Educators and Students

In the era of increasingly rapid digital transformation, education can no longer be separated from technological intervention, especially artificial intelligence. The integration of AI in education opens up great opportunities for personalization of learning, administrative efficiency, and real-time monitoring of student progress. However, behind this extraordinary potential, there are ethical risks and social challenges that require a more critical and responsible approach to education. One fundamental aspect in responding to these challenges is through strengthening digital literacy and AI ethical literacy for the entire education ecosystem, including teachers, students, and policy makers. Digital literacy is no longer enough to only include the ability to

use technological devices, but must also develop into a critical understanding of how technology works, how data is collected and used, and how it affects social, political, and psychological aspects (Obeid & Man, 2020).

AI ethical literacy, as an extension of digital literacy, is a cognitive and moral framework that helps individuals understand the implications of using intelligent systems in everyday life. This literacy not only involves an introduction to algorithms and machine learning mechanisms, but also includes the ability to question the fairness, transparency, and accountability of the systems used. In the context of higher education, it is important to instill in students the understanding that AI is not a neutral entity; it is shaped by humans, and therefore has the potential to reflect and reinforce existing social biases. AI ethics education can open up a critical discussion space regarding the impact of AI on human rights, data privacy, and its influence on ways of thinking and decision-making. Thus, students become not only users of technology, but also critical observers of the social implications of digital innovation. The role of teachers in this process is very crucial. Teachers are not only facilitators of learning, but also moral directors and guardians of values in the educational process (Andersson et al., 2022). Therefore, teacher training in the supervision and responsible use of AI is a must that cannot be postponed. Teachers must be equipped with sufficient understanding of how AI works, how to read and interpret the results of AI-based learning analytics, and how to avoid potential misuse of this technology. The training provided is not only technical, but also ethical and pedagogical. Teachers need to have the competence to assess when technology should be used and when a human approach is more relevant. They must also be able to integrate values such as empathy, fairness, and freedom of thought in every learning interaction involving technology.

Teacher training should also be directed at developing reflective and adaptive skills in responding to the rapid development of technology. AI technology is dynamic and continues to develop. Therefore, the training approach cannot be one-time and finished. Continuous learning is needed that allows teachers to always be updated on technological developments, policies, and the ethical discourses that accompany them. In this case, collaboration between educational institutions, government, and technology providers is important so that the training provided is always relevant and contextual. Teachers also need to be involved in the process of evaluating and formulating technology policies in schools, so that they are not only implementers, but also empowered decision makers.

Efforts to create a digitally and ethically competent generation will not succeed without the support of a conducive school ecosystem. Therefore, the formation of a school culture that is critical and reflective of technology is an important foundation. A healthy school culture not only encourages the use of technology, but also builds collective awareness of the values underlying its use. Schools must be spaces that allow students and teachers to discuss technology openly, question its impacts, and develop joint policies that support human values. This culture must be instilled through daily practices, from participatory decision-making, transparency in the use of student data, to the application of the principle of justice in access to technology.

Building a critical and reflective school culture cannot be separated from visionary school leadership. School leaders must be able to make the issue of technology ethics an integral part of the educational vision. They must ensure that every decision taken regarding the use of AI is in line with the principles of inclusive, democratic, and sustainable education. In addition, they must also be able to create a space for dialogue between teachers, students, and parents regarding the fair and responsible use of technology. The implementation of ethical technology policies is not enough to be done only administratively, but must be understood and implemented as part of the school's identity.

One concrete form of a critical culture towards technology is the development of a curriculum that not only emphasizes technical digital competence but also encourages critical and reflective thinking towards the use of technology. The curriculum must be able to combine technical understanding, media literacy skills, and ethical and value discourse (Haghighat et al., 2020). For example, in informatics lessons, students are not only taught how to create programs or use software, but are also invited to discuss how the technology can affect work, personal life, and social relationships. In other subjects such as sociology, philosophy, and language, students can also examine the social impacts of automation, digital surveillance, and algorithms in public decision-making. This kind of cross-curricular approach strengthens students' understanding that AI and digital technology are part of a complex and non-neutral social ecosystem. Furthermore, AI ethics literacy education must also pay attention to the local and socio-cultural context of students. Not all communities have equal access to technology, and not all values that develop in society are in line with the global principles of digital ethics. Therefore, the educational approach must respect diversity and encourage intercultural dialogue in understanding how

technology interacts with local values. Teachers and education policymakers need to be sensitive to the potential bias of technological globalization and remain grounded in the Indonesian context in formulating technology-based school curricula and policies.

Finally, the success of digital literacy and AI ethics education does not only depend on the curriculum or teacher training, but also on the active participation of all elements of society. Parents, businesses, digital communities, and civil society organizations need to participate in shaping norms, expectations, and social control over the use of technology in the school environment. Synergy between schools and communities is important to create ethical control that is not only formal, but also social and cultural. With this collective involvement, schools will become centers for the formation of a young generation that is not only technologically intelligent, but also ethically and socially mature.

Through strengthening digital literacy and AI ethics, transformative teacher training, and the formation of a critical and reflective school culture, education can play a strategic role in shaping a more inclusive, equitable, and sustainable digital future. Education is not only tasked with teaching technological skills, but also instilling awareness of how technology should be used for the common good. With a framework that supports human values, senior secondary education has a great opportunity to become an agent of change capable of directing the development of AI in a more ethical and dignified direction.

CONCLUSION

The integration of artificial intelligence in secondary education has great potential to improve the quality of learning, personalize learning experiences, and efficiency in pedagogical processes. However, the use of AI also brings complex ethical challenges, including issues of privacy, algorithmic bias, and inequality of access to technology. Therefore, an approach is needed that focuses not only on the use of technology, but also on understanding the ethical values in its application.

This study develops a framework for responsible digital pedagogy by emphasizing the importance of collaboration between educators, technology developers, policy makers, and learners. This framework includes the principles of transparency, accountability, fairness, and inclusivity in the use of AI in the classroom. In addition, the formation of digital competencies that include ethical awareness and AI literacy for students and teachers is an

important foundation in encouraging the implementation of safer and more sustainable AI in educational environments.

With a literature review-based approach, this study provides a strong conceptual basis for the development of educational policies and practices that are adaptive to technological developments. In conclusion, ethical AI integration is not only a technological choice, but also a social commitment to creating a fair, reflective, and responsible learning environment in the digital era. This research paves the way for further, more applied and contextual studies on the application of AI in educational practices across various social and cultural backgrounds.

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