

Philosophy of Education as the Foundation for the Development of Learning Technology in the Digital Era

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ABSTRAK

The development of digital technology has brought significant changes in the world of education, especially in the learning process and design. However, the use of learning technology that is not accompanied by a philosophical foundation has the potential to shift the essential goals of education. This research aims to examine the role of educational philosophy as the foundation for the development of learning technology in the digital era. This research uses a qualitative approach with a literature study method, through the analysis of relevant scientific literature in the fields of educational philosophy, learning technology, and digital ethics. The results of the study show that the philosophy of education functions as a normative, ethical, and conceptual foundation in directing the use of learning technology to remain oriented to human values, character building, and competency development in the 21st century. In addition, the integration of educational philosophy in the development of learning technology contributes to improving the quality, meaningfulness, and sustainability of digital learning. Thus, the philosophy of education is a key element in ensuring that learning technology is not only technically effective, but also pedagogically meaningful.

INTRODUCTION

Education is a discipline of science and practice that not only focuses on the technical aspects of knowledge transfer, but also on the aspects of values, goals, meanings, and human development as a whole. As a study, the philosophy of education seeks to answer fundamental questions about what the main purpose of education is and how education should be carried out in every socio-cultural context. According to Susanti and Sylvianica (2024), the philosophy of education remains relevant in the digital era because it can provide an ethical, humanist, and reflective framework for current learning practices.

In addition, the integration of digital technology into the education system has become a global phenomenon that has changed the way the teaching and learning process is carried out. Learning technology brings a variety of tools and platforms—from learning management systems (LMS) to artificial intelligence and virtual reality—that can improve access, flexibility, and student engagement in learning. However, as explained by Fadli (2024), the use of technology without a strong philosophical foundation has the potential to make the educational process only focus on technical efficiency, without paying attention to essential learning values.

In this context, the philosophy of education not only serves as a normative foundation, but also as a reflective tool to consider the social, ethical, and epistemological impacts of the use of technology in learning. For example, the philosophy of digital pedagogy emphasizes the importance of critical awareness of the use of technology so that education does not just become a mere consumption of technology, but still maintains humanistic and ethical educational goals (Fadli, 2024)

The rapid social changes caused by the digital revolution also bring new challenges, such as moral issues, data privacy, and a balance between innovation and educational traditions. Nusi and Zaim (2024) emphasized that digital transformation in education needs to be understood through an educational philosophy framework that considers ethical aspects and student safety, so that technology does not solely solve problems but also does not create new challenges uncontrollably

Furthermore, the philosophy of education helps formulate pedagogical principles that harmonize between traditional values and the need for technological innovation. For example, a study by Maisaroh et al. (2025) shows that a combination of moral values and technological innovation can create learning designs that are not only efficient but also culturally and personally meaningful for learners.

Empirical research also shows that philosophical foundations in the development of educational technology, such as the synthesis between educational goals of values and digital capabilities, contribute to digital literacy, critical thinking skills, and adaptation to socio-technological changes. Tejawati and colleagues (2024) found that a philosophical understanding of educational technology can positively affect the improvement of students' digital literacy through the use of technology that is in line with the expected educational values.

Thus, this study aims to comprehensively examine the role of educational philosophy as a foundation in the development of learning technology in the digital era. The focus of this study includes the examination of key philosophical concepts, innovative learning technology practices, and the implications of education on the formation of students' 21st century character and skills. It is hoped that the results of this research can make a theoretical and practical contribution to the development of educational policies and technology-based learning practices based on a strong educational philosophy.

LITERATURE REVIEW

Philosophy of Education

Philosophy of education is a branch of philosophy that examines the essence, goals, values, and processes of education in depth and reflectively. This study serves as a normative basis in determining the direction of education, including how education should shape human beings intellectually, morally, and socially (Fadli, 2024). In this context, the philosophy of education plays a role not only as an abstract theory, but also as a practical guide in educational decision-making.

Historically, the philosophy of education developed through various schools of thought such as idealism, realism, pragmatism, and existentialism, each of which contributed to the educational perspective. These streams affect the determination of learning goals, the role of educators, and the learning methods used in the education system (Susanti & Sylvianica, 2024). Thus, the philosophy of education forms the conceptual framework that forms the foundation of educational policy and practice.

In the digital age, the philosophy of education is increasingly relevant as education faces the challenges of rapid and complex technological change. The philosophy of education serves as a reflective tool to ensure that educational innovation remains grounded in human values, justice, and ethics. Without a philosophical foundation, education risks losing its value orientation and focusing only on the technical aspects of learning (Nusi & Zaim, 2024).

Learning Technology in the Digital Era

Learning technology in the digital era includes the use of hardware, software, and digital systems to support the teaching and learning process. Technological developments such as Learning Management Systems (LMS), artificial intelligence, and interactive multimedia have changed the way teachers deliver materials and the way students acquire knowledge (Tejawati et al., 2024). This technology allows learning to be more flexible, adaptive and personalized.

The use of learning technology provides various benefits, including increasing access to education, the efficiency of the learning process, and increasing student involvement. However, the use of technology also brings challenges in the form of digital divides, technological dependence, and the potential degradation of educational values if not balanced with the right pedagogical approach (Maisaroh et al., 2025).

Therefore, learning technology cannot be seen as a neutral tool, but rather as a cultural product that carries certain values and implications. The development of learning technology must consider educational goals, student

characteristics, and socio-cultural context. This approach emphasizes the importance of a philosophical basis in every learning technology innovation (Fadli, 2024).

Philosophy of Education as the Foundation for the Development of Educational Technology

The philosophy of education serves as the main foundation in designing and developing meaningful learning technologies. Philosophical foundations help educators and technology developers determine the purpose of using technology, not just how it is used. With this approach, technology is positioned as a means to achieve educational goals, not as goals in itself (Susanti & Sylvianica, 2024).

Furthermore, the philosophy of education provides an ethical framework in the use of learning technology, especially related to the issues of data privacy, digital ethics, and social responsibility. Philosophical values such as humanism, justice, and freedom of learning are important principles in ensuring that learning technology supports the development of students holistically (Nusi & Zaim, 2024).

Research shows that the integration of educational philosophy in the development of learning technology has a positive impact on the quality of learning and the formation of students' character. Technology designed based on philosophical values is able to improve digital literacy, critical thinking skills, and ethical awareness of students in facing the challenges of the digital era (Tejawati et al., 2024).

Conceptual Framework of the Relationship between Philosophy of Education and Learning Technology

To clarify the relationship between educational philosophy and learning technology, the following is presented a conceptual table that summarizes the role of educational philosophy in the development of learning technology in the digital era.

Table 1. The Role of Educational Philosophy in the Development of Learning Technology

Aspects of Educational Philosophy	Implications in Learning Technology
Educational Objectives	Determining the direction and outcomes of technology-based learning
Values and Ethics	Ensure humane and responsible use of technology
Views on Learners	Encourage student-centered learning design
The Role of Educators	Strengthening the function of teachers as facilitators and supervisors
Socio-Cultural Context	Adapting technology to the needs and character of the community

The table shows that the philosophy of education has a strategic role in ensuring that learning technologies are developed in harmony with educational goals and values. With this framework, learning technology can function as an instrument that enriches the learning process while maintaining the essence of education (Maisaroh et al., 2025).

METHODOLOGY

Types and Approaches to Research

This research uses a qualitative approach with the library research method. The qualitative approach was chosen because this research aims to understand, interpret, and analyze the concept of educational philosophy and its relevance as the foundation for the development of learning technology in the digital era in depth and contextual. Literature studies allow researchers to explore theoretical thoughts, philosophical concepts, as well as previous research findings that are relevant to the focus of the study.

The literature study method is used to examine various scientific sources related to educational philosophy, learning technology, and digital transformation in education. The sources are systematically analyzed to build a comprehensive and integrated conceptual understanding. This approach is considered appropriate because the object of research is in the form of ideas, concepts, and theoretical thoughts, not quantitatively measured phenomena.

Data Collection Sources and Techniques

Research data was obtained from secondary sources in the form of relevant scientific literature, including indexed national and international journal articles, academic books, scientific proceedings, and education policy documents related to educational philosophy and learning technology. The literature used is prioritized from publications in the last five years (2020–2025) to ensure the relevance and novelty of the study.

Data collection techniques are carried out through searching scientific databases such as Google Scholar, DOAJ, Garuda, and university journal portals. The keywords used include educational philosophy, learning technology, digital learning, digital pedagogy, and digital education ethics. The collected literature is then selected based on the suitability of the topic, the credibility of the source, and its contribution to the research focus.

Data Analysis Techniques

Data analysis was carried out using qualitative content analysis. The analysis stage begins with carefully reading and understanding all literature sources, then identifying the main concepts related to educational philosophy and learning technology. Furthermore, the researcher grouped themes, compared concepts, and interpreted meanings to find the relationship between ideas.

The analysis process is carried out iteratively and reflectively to produce a complete conceptual synthesis. The results of the analysis were then compiled in the form of a systematic scientific narrative to explain the role of educational philosophy as the foundation for the development of learning technology in the digital era. This technique allows researchers to draw conclusions based on the patterns, similarities, and differences of thought of experts.

RESEARCH RESULTS

Discover the Essence of Philosophy of Education in the Digital Era

The results of the literature review show that educational philosophy still plays a fundamental role in determining the direction and goals of education in the digital era. Various literature affirms that the philosophy of education serves

as a normative foundation that guides educational practices so as not to lose their value orientation despite the rapid development of technology. These findings show that digital education cannot be separated from philosophical questions about the ultimate goal of education and the formation of the whole human being.

Furthermore, the results of the analysis reveal that the philosophy of education provides a conceptual framework to understand the relationship between humans, knowledge, and technology. Learning technology is not seen as just a technical tool, but as a medium that influences the way students think, interact, and learn. Thus, the philosophy of education helps interpret the epistemological impact of the use of technology in learning.

Other findings show that the main values of the philosophy of education such as humanism, rationality, and morality are the basic principles that must be inherent in the development of learning technology. Digital literacy, critical thinking, and ethical responsibility emerged as competencies emphasized in the literature when technology is used based on philosophical reflection. This emphasizes that technology must be directed to strengthen human values, not replace them.

Overall, the results of this study show that the philosophy of education plays a role as a moral and intellectual compass in facing the challenges of digital education. Without an educational philosophy, the use of technology has the potential to be mechanistic and lose the meaning of education. Therefore, the philosophy of education is the main foundation in designing digital learning that is oriented towards human development.

Findings on the Characteristics of Philosophical Value-Based Learning Technology

The results of the study show that learning technology developed based on philosophical foundations has different characteristics compared to technocratic technology. Philosophical value-based learning technology places students as active subjects of learning, not just technology users. This approach is in line with the philosophy of education that emphasizes learner-centered learning.

In addition, the findings show that philosophical-based learning technology integrates cognitive, affective, and psychomotor aspects in a balanced manner. Technology is not only used to deliver material, but also to build interactions, reflections, and meaningful learning experiences. This can be seen from the use of interactive media, reflective online discussions, and value-oriented digital project-based learning.

The results of the analysis also revealed that learning technology based on educational philosophy pays attention to the social and cultural context of students. Technology is designed to be adaptive to the needs, backgrounds, and conditions of students, so that it does not create digital gaps or exclusions. These findings confirm the importance of a contextual approach in the development of learning technologies.

Thus, the main characteristics of philosophical value-based learning technology include humanistic orientation, integration of moral values, and pedagogical meaning. Technology does not stand alone, but is part of the

education system that aims to shape the character and competencies of students holistically.

Findings on the Role of Ethics and Values in the Development of Learning Technology

The results of the study show that ethics is a central issue in the development of learning technology in the digital era. The literature confirms that the use of technology without ethical considerations can lead to various problems, such as data privacy violations, technological dependence, and degradation of human interaction. Therefore, the philosophy of education plays a role in instilling ethical awareness in the design and implementation of learning technologies.

Other findings show that the value of fairness and inclusivity is a major concern in the development of learning technologies. Technology designed without accessibility in mind has the potential to widen the education gap. The philosophy of education provides the basis for ensuring that technology is used fairly and accessible to all students, without social or economic discrimination.

In addition, the results of the study revealed that digital ethics needs to be integrated into the learning process itself. Philosophical-based learning technology not only teaches academic materials, but also shapes students' awareness of the responsible use of technology. This includes a critical attitude towards digital information, online communication ethics, and the security of personal data.

Overall, these findings suggest that ethics and values are not additional elements, but rather core components in the development of learning technologies. The philosophy of education serves as a reflective basis to ensure that technology supports the goals of moral and civilized education.

Findings on the Implications of Educational Philosophy on Digital Learning Quality

The results of the study show that the integration of educational philosophy in the development of learning technology has a positive impact on the quality of digital learning. Learning based on philosophical values tends to be more meaningful, reflective, and oriented towards the development of high-level thinking skills. Students not only receive information, but are also invited to understand, analyze, and reflect on knowledge.

The next findings show that the role of educators has undergone a significant shift in digital learning based on educational philosophy. Teachers no longer play the role of the only source of knowledge, but rather as facilitators, mediators, and value guides. Technology is used to support these roles, not replace them, so that pedagogical interaction is maintained.

The results of the analysis also show that digital learning based on the philosophy of education is able to improve 21st century skills, such as critical thinking, creativity, collaboration, and digital literacy. Technology is a means to develop these competencies through challenging and contextual learning activities. This shows that the philosophy of education contributes directly to the relevance of learning to the demands of the times.

Overall, the results of the study confirm that the philosophy of education makes a significant contribution to improving the quality of digital learning. The integration of educational values, ethics, and goals in learning technology results

in a learning process that is not only technically effective, but also pedagogically and humanistically meaningful

DISCUSSION

The Relevance of Educational Philosophy in Facing Digital Transformation

The results of the study show that the philosophy of education remains strongly relevant in facing digital transformation in the field of education. This finding is in line with the view of the philosophy of education which places education as a process of human formation as a whole, not just the mastery of technology. In this context, the philosophy of education serves as a reflective basis that keeps technological innovation from shifting the essential goals of education.

Digital transformation has brought significant changes in the way we learn, teach, and interact in the educational environment. However, without a clear philosophical framework, these changes have the potential to create learning practices that are mechanistic and purely efficiency-oriented. Therefore, the philosophy of education acts as a balance between the demands of technological innovation and educational values that are humanistic and ethical.

The research findings also reinforce the argument that educational philosophy helps educators understand the epistemological impact of technology on the way learners acquire and interpret knowledge. Digital technology affects students' thinking, attention, and social interaction patterns. With a philosophical foundation, educators can design digital learning that encourages critical reflection, not just information consumption.

Thus, this discussion emphasizes that the philosophy of education is not an outdated concept, but is increasingly important in the digital era. The philosophy of education serves as a conceptual foundation that ensures that the digital transformation of education remains oriented towards human development and human values.

Learning Technology as a Value-Based Pedagogical Instrument

The results of the study show that learning technologies developed based on philosophical values tend to be more pedagogically meaningful. Technology is no longer seen as the ultimate goal of learning, but rather as an instrument to achieve broader educational goals. These findings support a critical pedagogical approach that emphasizes the conscious and reflective use of technology.

Further discussion shows that learning technology based on educational philosophy is able to create a more contextual and participatory learning experience. Students are actively involved in the learning process through interaction, collaboration, and reflection. This reinforces the idea that technology can be a means of empowering students if used with the right pedagogical approach.

In addition, philosophical value-based learning technology encourages integration between cognitive, affective, and social aspects in learning. Digital learning focuses not only on academic achievement, but also on the formation of attitudes, values, and character. Thus, technology plays a role in strengthening the moral and social dimensions of education.

Therefore, this discussion emphasizes that the success of learning technology is not only determined by the sophistication of its technology, but by the extent to

which it is in harmony with the values and goals of education. The philosophy of education is the key in ensuring this harmony.

Digital Ethics as a Fundamental Dimension in Technology-Based Learning

The results of the study highlight the importance of digital ethics as an integral part of the development of learning technology. Issues such as data privacy, information security, and responsible use of technology are becoming serious challenges in digital education. This discussion shows that the philosophy of education provides an ethical framework to respond to these challenges in a systematic manner.

Digital learning without ethical considerations has the potential to have negative impacts, such as the misuse of technology and the degradation of social values. Therefore, the integration of digital ethics in learning is very important. The philosophy of education helps formulate ethical principles that can be used as a guideline in the use of learning technology.

In addition, digital ethics is not only the responsibility of educators, but also part of the competencies that students must have. Technology-based learning based on the philosophy of education encourages students to have a critical awareness of the use of technology. This includes a responsible attitude, criticism of digital information, as well as awareness of the social impact of technology.

Thus, this discussion emphasizes that digital ethics is a fundamental dimension in technology-based learning. The philosophy of education serves as a normative foundation that ensures that learning technology is used in a moral and civilized manner.

Implications of Educational Philosophy on the Quality and Sustainability of Digital Learning

The results of the study show that the integration of educational philosophy in learning technology has a positive impact on the quality of digital learning. Learning becomes more meaningful, reflective, and oriented towards 21st century competency development. These findings show that the quality of digital learning is not only determined by technical aspects, but also by the depth of the philosophical values that underlie it.

Further discussion shows that the philosophy of education contributes to the sustainability of digital learning. Technologies developed without a value foundation risk becoming obsolete or abandoned, while technologies based on educational philosophy tend to be adaptive and relevant in the long run. This is because the technology is designed based on universal educational principles.

In addition, the philosophy of education assists educators and policymakers in formulating sustainable learning technology development strategies. Technology-based education policies based on philosophical reflection tend to be more inclusive, ethical, and responsive to the needs of students. Thus, the philosophy of education has strategic implications in digital education planning.

Overall, this discussion emphasizes that educational philosophy is a key element in improving the quality and sustainability of digital learning. The integration of educational philosophy and learning technology results in educational practices that are not only innovative, but also meaningful and future-oriented.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the literature review and the discussions that have been carried out, it can be concluded that the philosophy of education has a very fundamental role as the foundation for the development of learning technology in the digital era. The philosophy of education provides a normative and conceptual framework that guides the direction, goals, and values that must be realized in technology-based educational practices. Without a strong philosophical foundation, the use of learning technology has the potential to lose its value orientation and focus only on technical aspects.

The next conclusion shows that learning technology cannot be separated from human values, ethics, and educational goals. The results of the study confirm that learning technology developed based on philosophical reflection is able to create a learning process that is more meaningful, humanistic, and oriented towards holistic student development. In this case, technology serves as a pedagogical instrument that supports active, reflective, and student-centered learning.

In addition, this study concludes that the philosophy of education plays an important role in integrating the digital ethical dimension into learning. Issues such as data privacy, information security, and responsibility for the use of technology are crucial aspects that must be considered in the development of learning technology. With the foundation of educational philosophy, learning technology can be directed to shape digital literacy and ethical awareness of students in facing the challenges of the digital era.

Overall, this study confirms that the integration of educational philosophy in the development of learning technology contributes significantly to improving the quality, relevance, and sustainability of digital learning. The philosophy of education serves not only as a theoretical basis, but also as a practical guide in designing, implementing, and evaluating learning technologies that are aligned with national and global educational goals.

Based on the conclusions of the study, the researcher recommends that educators and education practitioners consciously integrate educational philosophy in the planning and implementation of technology-based learning. Educators need to understand that learning technology must be used in a reflective and value-oriented manner, so as to not only increase learning effectiveness, but also shape the character and ethics of learners.

The next recommendation is aimed at educational technology developers and policymakers. The development of digital learning platforms and systems should not only consider technical aspects and innovation, but also pay attention to philosophical values, digital ethics, and the principles of justice and inclusivity. Technology-based education policies need to be prepared with a philosophical approach in order to be able to respond to educational challenges in a sustainable manner.

Furthermore, the researcher recommends that educational institutions include the study of educational philosophy and digital ethics as an integral part of the development of educator competencies. Teacher training and professional development needs to emphasize a philosophical understanding of learning technology, so that educators are able to play a role as value facilitators in the midst of digital transformation.

ADVANCED RESEARCH

Finally, further research is recommended to develop an empirical study on the implementation of educational philosophy in learning technology at various levels and educational contexts. Quantitative and mixed methods research can be carried out to measure the concrete impact of the integration of educational philosophy on students' learning outcomes, character, and digital literacy, thereby enriching the treasure of educational research in the digital era.

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