

Reconstructing Educational Foundations for Addressing Educational Disruption in the Digital Era

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Abstract

Purpose: This study aims to analyze the urgency of reconstructing Educational Foundations in addressing educational disruption in the digital era and to propose a multidimensional conceptual framework for strengthening Educational Foundations in higher education.

Research Methodology: This study employed a qualitative library research design through a systematic review of academic journal articles, books, and policy documents indexed in Google Scholar, DOAJ, Scopus, and ScienceDirect. The selected literature was analyzed using qualitative content analysis to identify, categorize, and synthesize major themes related to educational disruption, digital transformation, and the future direction of Educational Foundations.

Results: The findings identified four interrelated dimensions requiring reconstruction: philosophical, sociological, pedagogical, and digital ethical perspectives. The analysis also revealed that Educational Foundations courses remain predominantly theoretical and insufficiently responsive to contemporary educational challenges, including digital inequality, limited digital literacy, curriculum transformation, digital ethics, and the evolving role of teachers in the Society 5.0 era.

Conclusions: Educational Foundations should be reconstructed as an integrated and multidimensional framework that combines humanistic values, digital literacy, reflective pedagogy, digital citizenship, and teacher professional competence to support adaptive, future-oriented, and humanistic education.

Limitations: This study is limited by its reliance on secondary data and conceptual analysis without empirical field validation.

Contributions: This study provides a comprehensive conceptual framework that can support curriculum development, teacher education programs, and educational policymaking while promoting more adaptive, reflective, and humanistic educational practices for twenty-first-century learning.

Keywords: *Digital Transformation, Educational Disruption, Educational Foundations, Society 5.0, Twenty-First-Century Education*

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1. Introduction

Education has long been recognized as a fundamental pillar for the development of civilization and national progress. Prominent educational thinkers, including John Dewey and Ki Hadjar Dewantara, emphasized that education extends beyond the transmission of knowledge by fostering character formation, moral development, and critical social awareness. In the Indonesian context, this perspective is reflected in the Preamble to the 1945 Constitution, which highlights the state's responsibility to "enlighten the life of the nation" through equitable access to quality education. Since independence, Indonesia has continuously reformed its education system through major policy initiatives, including the expansion of compulsory education and, more recently, the implementation of the Independent Curriculum (*Kurikulum Merdeka*) to strengthen learner autonomy and competency-based education ([Suhartia, 2025](#)).

In the twenty first century, education has entered a new phase characterized by rapid digital transformation driven by the Industrial Revolution 4.0. Advances in artificial intelligence, automation, big data, cloud computing, and digital connectivity have significantly reshaped the ways knowledge is produced, accessed, and disseminated. These technological developments have transformed educational systems by requiring schools and higher education institutions to prepare learners with critical thinking, creativity, collaboration, communication, and digital competencies necessary for participating in an increasingly interconnected global society. Consequently, educational systems are expected not only to integrate technology into learning but also to redesign educational processes that are adaptive, innovative, and responsive to continuous societal change ([Lase, 2019](#)). This transformation has also accelerated the adoption of online and collaborative learning technologies in higher education, highlighting the growing importance of pedagogically meaningful technology integration in educational practice ([Bond et al., 2021](#)).

Recent studies further demonstrate that digital transformation has fundamentally reshaped educational ecosystems by promoting more flexible, personalized, and learner-centered approaches while simultaneously creating new challenges related to educational equity, quality, and sustainability ([Mukul & Büyüközkan, 2023](#)). Recent evidence also suggests that digital transformation requires learning environments to adopt pedagogically appropriate approaches that balance technological innovation with meaningful learner engagement. Digital learning should not merely focus on the adoption of technology but also promote interactive, flexible, and learner-centered pedagogical practices capable of accommodating diverse learning needs ([Mundia, 2026](#)). In addition, the effective integration of digital technology should be supported by instructional innovations that enhance learning engagement while strengthening teachers' pedagogical competence. Evidence from recent studies indicates that Google Site-based interactive learning media can improve students' learning engagement and support teachers in implementing more effective digital pedagogical practices ([Dzulfikry, Bundu, & Saud, 2025](#)). These findings reinforce the argument that digital transformation should be accompanied not only by technological innovation but also by the reconstruction of Educational Foundations that equips future educators with the philosophical, pedagogical, sociological, and ethical competencies required to respond to the demands of twenty-first-century education.

Learning is no longer confined to conventional classrooms but increasingly occurs through digital platforms that enable interaction across time and geographical boundaries. This transformation illustrates that educational change involves not only technological innovation but also a reconsideration of educational purposes, learning processes, and human development. Therefore, technological advancement should be accompanied by educational perspectives that continue to emphasize critical thinking, human development, and social responsibility rather than focusing solely on technological efficiency ([Syerlita, 2024](#)).

The transformation of education is closely associated with broader changes in digital society. The emergence of digital communication, online collaboration, and data driven decision-making has altered how individuals interact, construct knowledge, and participate in social life. As a result, educational concepts such as Education 4.0 have emerged to describe learning systems that integrate

digital technology with the competencies required in contemporary society. Educational institutions are therefore expected to redesign curricula, learning environments, and graduate competencies to remain relevant to evolving workforce demands and societal needs. The increasing adoption of artificial intelligence, virtual classrooms, adaptive learning systems, and mobile learning further illustrates how digital technology has become an integral component of educational transformation worldwide ([Martin, Sun, & Westine, 2020](#)).

The integration of digital technology has generated substantial innovation in teaching and learning practices. Learning Management Systems (LMS), virtual learning environments, and various digital applications have enabled more flexible, collaborative, and student-centered learning experiences while expanding learners' access to educational resources ([Trust & Whalen, 2020](#)). Nevertheless, these developments have also exposed significant disparities in educational access. The digital divide remains a major challenge because unequal access to internet connectivity, digital devices, and technological infrastructure continues to limit learning opportunities, particularly for students from disadvantaged communities and remote regions. Consequently, digital transformation has not yet fully achieved the goals of educational equity and social justice, despite its considerable potential to improve learning quality ([Unesco, 2021](#)).

These inequalities became increasingly visible during the COVID-19 pandemic, when educational institutions were required to shift rapidly from face-to-face instruction to online learning. Although this transition accelerated digital innovation, it also revealed substantial differences in institutional readiness, technological infrastructure, and digital competence among educators and learners ([Dhawan, 2020](#)). The experience demonstrated that successful digital transformation depends not only on the availability of technology but also on the capacity of educational systems to develop human resources capable of utilizing technology effectively, critically, and ethically. Accordingly, educational transformation should be understood as a multidimensional process involving technological readiness, pedagogical innovation, institutional adaptation, and human capacity development rather than merely the adoption of digital tools ([Dhawan, 2020](#)); ([Trust & Whalen, 2020](#)).

The integration of digital technology into education has not only transformed instructional practices but has also exposed structural inequalities within educational systems. One of the most significant challenges is the digital divide, which refers to unequal access to digital infrastructure, devices, and internet connectivity across different social and geographic groups. Students in remote areas and low income communities often face limited access to online learning resources, which directly affects their learning outcomes and educational participation ([Unesco, 2021](#)). This condition demonstrates that although digital transformation offers opportunities for educational expansion, it simultaneously reinforces existing socio economic disparities in education systems.

The COVID-19 pandemic further highlighted these inequalities by forcing educational institutions worldwide to shift abruptly to online learning systems. While this transition accelerated the adoption of digital learning technologies, it also revealed the lack of readiness among many institutions, teachers, and students to fully engage in digital education ([Dhawan, 2020](#)). In many cases, insufficient infrastructure, limited digital competence among educators, and unequal access to learning technologies created significant barriers to effective learning. This situation confirms that digital transformation in education is not merely a technological shift but also a systemic challenge involving human, institutional, and pedagogical dimensions ([Trust & Whalen, 2020](#)).

In addition to infrastructural challenges, teacher readiness has become a critical factor in determining the success of digital education. Many educators still struggle to effectively integrate digital tools into their teaching practices, particularly in designing interactive learning experiences, utilizing learning management systems, and implementing technology-based assessment strategies. As a result, teaching practices in some contexts remain traditional and less responsive to the demands of digital learning environments ([Trust & Whalen, 2020](#)). This condition indicates that digital transformation requires continuous professional development for teachers, particularly in enhancing digital literacy and pedagogical innovation.

The shift toward student centered learning paradigms further emphasizes the changing role of teachers in contemporary education. Teachers are no longer positioned merely as transmitters of knowledge but as facilitators, mentors, and guides who support students in constructing knowledge actively and independently ([Fullan, 2013](#)). This transformation requires a redefinition of teacher competencies, including adaptability, creativity, critical thinking, and digital citizenship. Consequently, education systems must be designed to support these evolving roles through curriculum reform and professional development initiatives that align with twenty first century learning needs.

In Indonesia, these global transformations are reflected in ongoing curriculum reforms, particularly through the implementation of the Independent Curriculum (*Kurikulum Merdeka*). This curriculum aims to enhance learning flexibility, strengthen character education, and promote competency based learning approaches that support student autonomy and creativity ([Siburian, 2024](#)). However, despite its progressive orientation, the implementation of the Independent Curriculum faces several challenges, including limited teacher understanding of differentiated instruction and authentic assessment practices. These limitations often result in conventional teaching methods that do not fully align with the intended curriculum objectives ([Sirait, 2024](#)).

Moreover, the uneven distribution of teacher training and professional development programs across regions has contributed to disparities in curriculum implementation quality. Schools in urban areas generally have better access to training and educational resources compared to those in rural and remote areas. This imbalance further complicates efforts to achieve equitable educational transformation at the national level ([Sirait, 2024](#)). Therefore, curriculum reform alone is insufficient without parallel improvements in teacher capacity, institutional support, and educational infrastructure.

Beyond technological and pedagogical issues, the digital era has also raised significant concerns regarding students' ethical and moral development. The rapid expansion of social media and digital communication platforms has influenced behavioral patterns among young learners, leading to increased concerns about digital ethics, cyberbullying, intolerance, and reduced social responsibility ([Banks, 2015](#)). These issues indicate that education must address not only cognitive development but also ethical and character formation in digital environments.

The increasing prevalence of digital engagement among students has shifted attention toward online identity and academic performance, often at the expense of moral and social values. While cognitive achievement remains an essential component of education, the development of empathy, responsibility, and ethical awareness is equally important. In this regard, education should aim to cultivate humanistic values that enable learners to engage responsibly in both physical and digital communities ([Freire, 2005](#)). Without such balance, education risks producing technologically competent individuals who lack social and moral sensitivity.

Scholars have also raised concerns about the growing phenomenon of digital ethics challenges, including misinformation, online addiction, and cyberbullying among young users. Research indicates that adolescents are increasingly exposed to digital risks that require critical awareness and responsible digital behavior ([Livingstone & Helsper, 2010](#)). These developments highlight the importance of integrating digital ethics and media literacy into educational frameworks to ensure that students are not only technologically skilled but also ethically responsible digital citizens.

In response to these challenges, the role of teachers in the twenty-first century has evolved significantly. Teachers are expected to act as facilitators of learning who provide guidance, motivation, and emotional support to students in navigating complex digital environments ([Schleicher, 2018](#)). This expanded role requires teachers to possess not only pedagogical competence but also digital literacy, communication skills, and critical thinking abilities. However, in practice, many educators still face structural constraints, including administrative burdens and limited access to professional development opportunities, which hinder their ability to fully adapt to digital educational demands ([Sirait, 2024](#)).

The issues described above demonstrate that contemporary education is confronted with multidimensional challenges that cannot be resolved solely through technological innovation or administrative reform. Instead, these challenges require a deeper re-examination of the philosophical, sociological, humanistic, and pedagogical foundations of education. In this context, Educational Foundations should be understood not merely as a theoretical course in teacher education, but as a critical and integrative framework for analyzing and responding to complex educational transformations in the digital era ([Freire, 2005](#)).

Educational Foundations, as an interdisciplinary field, integrates philosophy, sociology, psychology, history, and educational policy to provide a comprehensive understanding of educational phenomena ([Rosmah, 2024](#)). However, in many higher education contexts, this course remains largely theoretical and disconnected from contemporary educational disruption. Students are often exposed to classical theories without sufficient engagement with emerging issues such as artificial intelligence in education, digital inequality, algorithmic learning systems, and ethical challenges in digital environments ([Habsy, 2024](#)). This gap indicates that Educational Foundations has not yet been fully developed as an adaptive framework capable of addressing twenty-first-century educational realities.

Previous studies have examined Educational Foundations from philosophical and conceptual perspectives and have also explored digital transformation in education from technological and pedagogical viewpoints ([Martin et al., 2020](#)); ([Trust & Whalen, 2020](#)). Nevertheless, these studies tend to remain fragmented, as they do not systematically integrate philosophical, sociological, humanistic, and technological dimensions into a unified conceptual reconstruction of Educational Foundations. As a result, there is still a lack of comprehensive scholarly work that explains how Educational Foundations can be operationalized as a multidimensional framework for addressing educational disruption in a coherent and systematic manner.

Addressing this gap, this study proposes a multidimensional reconstruction of Educational Foundations that integrates philosophical, sociological, humanistic, and technological perspectives into a unified conceptual framework. This reconstruction is designed not only to reinterpret Educational Foundations theoretically but also to operationalize it into practical dimensions, including curriculum development, pedagogical innovation, teacher professionalism, digital literacy, and digital ethics. Through this approach, Educational Foundations is repositioned as a transformative framework that bridges theoretical knowledge and practical educational needs in the digital era.

The originality of this study lies in its development of a conceptual synthesis that connects foundational educational perspectives with the realities of digital disruption in education. Unlike previous studies that treat Educational Foundations and digital transformation separately, this study integrates both domains into a structured framework that emphasizes their interdependence. This integration provides a more holistic understanding of how education systems can respond to rapid technological change while preserving humanistic and ethical values in learning processes.

Accordingly, this study addresses the following research questions:

- RQ1:* What key dimensions of Educational Foundations require reconstruction in response to educational disruption in the digital era?
- RQ2:* Why is the reconstruction of Educational Foundations necessary for contemporary teacher education and higher education systems?
- RQ3:* How can a multidimensional reconstruction framework of Educational Foundations be operationalized to support curriculum reform, pedagogical practices, and teacher professional development?

By answering these questions through a qualitative library research approach, this study aims to contribute to the development of Educational Foundations as a critical, reflective, and transformative framework for twenty-first-century education. The expected contribution of this study is both theoretical and practical: theoretically, it enriches the conceptual understanding of Educational Foundations in the context of digital transformation; practically, it provides a framework that can

guide curriculum designers, educators, and policymakers in responding to educational disruption in a more integrated and humanistic manner.

2. Literature Review and Hypotheses Development

2.1 Educational Foundations as a Theoretical Framework

Educational Foundations is a multidisciplinary field that integrates philosophical, sociological, historical, psychological, and cultural perspectives to understand educational phenomena comprehensively. It functions not only as an explanatory framework but also as a critical and normative basis for examining educational assumptions, purposes, and practices ([Pinelli, 2026](#)). Rather than being a purely applied discipline, the philosophy of education positions pedagogy as an autonomous field of inquiry with its own epistemological foundation. In this sense, Educational Foundations serves both descriptive and prescriptive roles in guiding educational theory and practice toward socially meaningful goals ([Pinelli, 2026](#)). Therefore, Educational Foundations enables educators to interpret educational issues contextually and respond to social change in a reflective and transformative manner. Its relevance extends beyond theoretical discourse and becomes increasingly important in addressing contemporary educational complexity.

2.2 Educational Disruption in the Era of Digital Transformation

The emergence of the Industrial Revolution 4.0 and Society 5.0 has significantly transformed global education systems. Digital transformation affects not only pedagogical practices but also institutional structures, learning environments, and required competencies for both teachers and learners ([Mukul & Büyüközkan, 2023](#)).

Technologies such as artificial intelligence, learning analytics, and digital platforms have fundamentally reshaped teaching and learning processes ([Martin et al., 2020](#)). Educational disruption, therefore, cannot be reduced to technological change alone but must be understood as a multidimensional shift involving philosophical, ethical, and pedagogical dimensions ([García-Morales, Garrido-Moreno, & Martín-Rojas, 2021](#)).

The COVID-19 pandemic accelerated this transformation while simultaneously exposing structural weaknesses in education systems. [Unesco \(2021\)](#) highlights that the digital divide remains a major barrier to equitable access to education, particularly for disadvantaged communities. Issues such as low digital literacy, ethical challenges in digital spaces, misinformation, and changing teacher roles further illustrate the complexity of educational disruption. These conditions indicate the necessity of rethinking Educational Foundations as a response to systemic transformation.

2.3 Philosophical Reconstruction of Educational Foundations

The philosophical dimension of education addresses fundamental questions concerning meaning, purpose, and values in education. From classical *paideia* to modern *Bildung*, educational thought has consistently emphasized holistic human development ([Pinelli, 2026](#)). [Freire \(2005\)](#) argues that education must function as a process of humanization that fosters critical awareness of social reality. In the context of digital transformation, this philosophical orientation is essential to prevent education from becoming overly instrumental and technology-centered. Thus, philosophical reconstruction ensures that educational systems continue to prioritize ethical values, human dignity, and social responsibility in an increasingly digital learning environment.

2.4 Transformative Educational Paradigm Shift

An educational paradigm consists of beliefs, values, and practices that shape educational processes ([Mokliak & Tarelko, 2023](#)). Contemporary education increasingly shifts toward learner-centered approaches emphasizing critical thinking, creativity, collaboration, and lifelong learning. [Mezirow \(1997\)](#) transformative learning theory highlights the role of critical reflection in reshaping existing assumptions. This paradigm shift reflects a transition from teacher-centered to learner centered education, requiring continuous adaptation from both educators and learners in response to social change.

2.5 Constructivist Perspective and Learner Centered Pedagogy

Constructivist theory emphasizes that learners actively construct knowledge through interaction and experience ([Driver, Asoko, Leach, Mortimer, & Scott, 1994](#)). Knowledge is not transmitted directly but developed through cognitive engagement and social negotiation. [Piaget \(1952\)](#), and [Vygotsky \(1978\)](#), further emphasize that learning occurs through active participation and social interaction. In this context, teachers function as facilitators who design meaningful learning experiences. Student-centered pedagogy has been shown to enhance motivation, critical thinking, and adaptive capacity ([Bhardwaj, 2026](#)). In digital learning environments, constructivist approaches are increasingly relevant for fostering collaboration, problem-solving, and self-regulated learning ([Zhao & Watterston, 2021](#)).

2.6 Humanistic Education and Lifelong Learning

Humanistic education emphasizes self-actualization, autonomy, empathy, and holistic human development ([Rogers, 1969](#)). Education is therefore not merely knowledge transmission but a process of developing the whole person. [Pinelli \(2026\)](#) emphasizes that education involves autonomy, communication, cultural transmission, and human development. In this context, moral and intellectual development must be integrated.

In addition, lifelong learning has become essential in responding to rapid technological and social change. [European \(2018\)](#) emphasizes the importance of competencies that support continuous adaptation throughout life. The integration of humanistic values and lifelong learning ensures that educational transformation remains centered on human well-being.

2.7 Holistic Educational Reform

Educational transformation requires a holistic approach that integrates curriculum, pedagogy, and assessment. Fragmented reforms are insufficient to address systemic educational challenges ([Bhardwaj, 2026](#)). Constructive alignment theory emphasizes coherence between learning outcomes, teaching activities, and assessment design ([Biggs, 1996](#)). Competency-based education further highlights the importance of applying knowledge and skills in real life contexts ([Spady, 1994](#)).

Assessment practices must also shift toward formative approaches that support learning processes ([Black & Wiliam, 1998](#)), rather than purely memorization based evaluation ([Popham, 2008](#)). Therefore, educational reconstruction requires systemic integration across all components of education.

2.8 Research Gap and Conceptual Contribution

Previous studies have examined digital transformation in education by ([García-Morales et al., 2021](#)), paradigm shifts by ([Mokliak & Tarelko, 2023](#)), curriculum reform by ([Bhardwaj, 2026](#)), and philosophical foundations of education by ([Pinelli, 2026](#)). However, these studies remain fragmented and have not yet been integrated into a comprehensive framework that connects philosophical, sociological, humanistic, and technological dimensions of Educational Foundations. As a result, there is a lack of a unified conceptual model that explains how Educational Foundations can be reconstructed to respond to educational disruption in the digital era. This study addresses this gap by proposing an integrative conceptual framework that synthesizes these dimensions into a coherent model of Educational Foundations reconstruction.

2.9 Research Propositions

Since this study adopts a library research approach, no statistical hypotheses are formulated. Instead, the study proposes the following conceptual propositions:

Proposition 1: Educational disruption in the digital era necessitates the reconstruction of Educational Foundations to maintain relevance in contemporary education.

Proposition 2: The integration of philosophical, sociological, constructivist, and humanistic perspectives strengthens the development of adaptive and reflective educators.

Proposition 3: Holistic educational reform integrating curriculum, pedagogy, and assessment supports balanced development between technological competence and human values.

Proposition 4: Transformative and lifelong learning perspectives enhance individuals' capacity to adapt to continuous social and technological change.

3. Research Methodology

This study employed a library research method with a qualitative descriptive approach to examine how Educational Foundations can be reconstructed in response to educational disruption in the digital era. Library research was considered appropriate because the study focuses on conceptual synthesis and theoretical analysis derived from existing scholarly literature rather than primary empirical data ([Sugiyono, 2022](#)).

3.1 Data Sources and Search Strategy

The literature was collected from four major academic databases, namely Google Scholar, DOAJ, Scopus, and ScienceDirect. These databases were selected because they provide multidisciplinary, peer-reviewed, and high-impact publications in the field of education, thereby ensuring the breadth, relevance, and academic credibility of the reviewed sources. The literature search was conducted using several keywords and their combinations, including “Educational Foundations,” “Foundations of Education,” “digital transformation,” “educational disruption,” “21st-century education,” “Society 5.0,” “education 4.0,” and “digital literacy in education.” Boolean operators (AND/OR) were applied to refine the search strategy and identify studies that were closely aligned with the research focus.

3.2 Time Span of Literature

The literature included in this study was limited to publications from 2015 to 2025, considering that this period represents the rapid development of digital transformation in education, particularly the emergence of Education 4.0 and Society 5.0 discourse.

3.3 Inclusion and Exclusion Criteria

The selection of literature was guided by explicit inclusion and exclusion criteria to ensure the relevance and quality of the reviewed sources. The inclusion criteria consisted of peer-reviewed journal articles, books, and policy documents published in English or Indonesian; studies addressing educational transformation, digital disruption, or Educational Foundations; research focusing on higher education, teacher education, or curriculum reform; publications within the 2015–2025 period; and articles indexed in at least one of the selected academic databases. Meanwhile, the exclusion criteria included duplicate publications across databases, non-academic sources such as blogs or opinion articles without scholarly foundations, studies unrelated to education or digital transformation, articles lacking methodological or conceptual clarity, and publications outside the defined time range.

3.4 Literature Selection Process

The initial search produced approximately 312 articles across all databases. After removing duplicates and applying inclusion and exclusion criteria, 96 articles were screened based on titles and abstracts. From this stage, 45 articles were selected for full-text review. Finally, 28 articles were identified as the core literature for in-depth analysis due to their strong relevance to Educational Foundations and digital transformation.

3.5 Data Collection Technique

Data were collected using documentation techniques, involving systematic reading, extraction, and organization of key findings, concepts, and theoretical arguments from selected literature. Each article was analyzed to identify relevant discussions on philosophical, sociological, humanistic, and technological dimensions of education.

3.6 Data Analysis Technique

The data were analyzed using qualitative content analysis following the interactive model proposed by [Miles, Huberman, and Saldaña \(2014\)](#), which consists of three main stages. The first stage, data reduction, involved selecting, focusing, and simplifying relevant information obtained from the reviewed literature. The second stage, data display, focused on organizing the extracted data into thematic categories to facilitate systematic interpretation. The final stage, conclusion drawing and verification, involved identifying patterns, interpreting relationships among themes, and constructing conceptual meanings based on the findings.

3.7 Coding Procedure

To ensure systematic analysis, a structured coding process was applied throughout the literature review. The first stage, open coding, involved identifying key concepts emerging from the literature, such as “digital divide,” “teacher role shift,” “humanistic education,” and “technological disruption.” The second stage, axial coding, focused on grouping these concepts into broader thematic categories, including philosophical, sociological, humanistic, and pedagogical foundations. The final stage, selective coding, involved integrating the identified categories into a unified conceptual framework for the reconstruction of Educational Foundations in response to digital transformation and educational disruption.

3.8 Validity and Trustworthiness

To ensure the credibility and validity of the findings, this study applied several validation strategies throughout the research process. Source triangulation was conducted by comparing findings from various types of literature, including journal articles, books, and policy documents, to obtain a comprehensive understanding of the research topic. Theoretical triangulation was applied by integrating multiple theoretical perspectives, such as constructivism, humanism, and critical pedagogy, to strengthen the interpretation of the findings. In addition, a consistency check was performed through repeated reading and re-analysis of selected literature to ensure stable thematic interpretations. An audit trail was also maintained by systematically documenting the literature selection process and coding procedures to enhance transparency and research reliability.

3.9 Research Design Justification

This library research design is suitable for exploring conceptual reconstruction because it allows comprehensive synthesis of interdisciplinary perspectives without being limited by contextual or institutional constraints. Therefore, it is appropriate for developing a theoretical framework of Educational Foundations in the context of digital disruption.

4. Results and Discussions

4.1 Main Findings of the Analytical Synthesis

The content analysis of the selected literature identified four major dimensions requiring the reconstruction of Educational Foundations in response to educational disruption in the digital era. Rather than functioning merely as a theoretical discipline, Educational Foundations should be repositioned as a multidimensional framework integrating philosophical, sociological, pedagogical, and digital ethical perspectives. These findings emerged from the systematic synthesis of literature discussing digital transformation, educational disruption, curriculum reform, teacher professionalism, digital literacy, and character education ([Mukul & Büyüközkan, 2023](#); [Zhao & Watterston, 2021](#)). The results of the analytical synthesis of Educational Foundations reconstruction are presented in Table 1.

Table 1. Results of the Analytical Synthesis of Educational Foundations Reconstruction

Major Theme	Problems Identified	Evidence from Literature	Reconstruction Proposed
Philosophical	Educational purposes increasingly focus on technological efficiency rather than holistic human development	Freire (2005) ; Pinelli (2026) Schleicher (2018)	Reorient Educational Foundations toward humanistic, reflective, and ethical education
Sociological	Digital inequality, unequal educational access, and changing social interaction	Unesco (2021) Livingstone and Helsper (2010)	Integrate social justice, digital citizenship, and educational equity
Pedagogical	Teacher centered practices and limited digital competence	Trust and Whalen (2020) Sirait (2024)	Strengthen reflective pedagogy and digital teacher competencies
Digital-Ethical	Cyberbullying, misinformation, weak digital literacy	Banks (2015) Livingstone and Helsper (2010)	Integrate digital ethics, media literacy, and responsible technology use

As shown in Table 1, the analytical synthesis demonstrates that the reconstruction of Educational Foundations should encompass four interrelated dimensions: philosophical, sociological, pedagogical, and digital-ethical. Each dimension addresses a distinct challenge arising from educational disruption while simultaneously providing a corresponding direction for curriculum reconstruction. Collectively, these dimensions indicate that Educational Foundations should move beyond its traditional theoretical orientation toward a more adaptive, reflective, and humanistic framework capable of responding to the demands of digital transformation and Society 5.0.

4.2 Reconstructing the Philosophical Foundation of Education in the Digital Era

The analysis indicates that the philosophical dimension constitutes the primary foundation requiring reconstruction. The reviewed literature consistently demonstrates that educational transformation has increasingly emphasized technological adaptation, while discussions concerning educational purposes, ethics, and human development have received comparatively less attention (Freire, 2005; Pinelli, 2026). This imbalance suggests that technological advancement should be complemented by renewed philosophical reflection to preserve education as a process of humanization rather than merely technological adaptation.

Digital transformation has fundamentally transformed modern education systems. The development of students' adaptive abilities, creativity, critical literacy, and reflective awareness now takes priority over the transmission of knowledge. Students must be equipped with the skills necessary to navigate the complexities and uncertainties of the world (Freire, 2005). Technological advancements have shifted the focus from a teacher-centered to a student-centered educational paradigm. Furthermore, rapid advances in artificial intelligence, big data, and other automation technologies are having a direct impact on education, as well as nearly every other area of life. Many cognitive tasks traditionally performed by humans are, in most cases, being taken over by digital systems and AI. Technology now dominates cognitive engagement tasks, and as a result, education systems must place greater emphasis on individual humanistic skills (Schleicher, 2018).

Recent scholarship on large language models further reinforces this argument. Kasneci et al. (2023) contend that generative artificial intelligence offers substantial opportunities for personalized learning, academic support, lesson planning, and knowledge creation. However, these technologies also introduce significant ethical challenges, including algorithmic bias, misinformation, diminished critical thinking, and excessive dependence on AI-generated content. Consequently, educational systems must not only prepare learners to utilize digital technologies effectively but also cultivate ethical reasoning, critical reflection, and responsible decision-making. This perspective reaffirms that technological innovation should serve human development rather than replace human judgment, thereby strengthening the humanistic orientation of Educational Foundations.

In addition, recent scholarship emphasizes that educational transformation should not solely prioritize technological efficiency but must also preserve educational purposes related to human flourishing, autonomy, and social responsibility (Pinelli, 2026). The post-pandemic context has further strengthened calls for educational models that are personalized, inquiry-based, and responsive to students' diverse needs (Zhao & Watterston, 2021). These skills include ethics, social empathy, creativity, and moral responsibility, which, unlike technical skills, cannot be replaced by technology. Banks (2015) explains that reconstructing the philosophy of education is essential to maintain education's focus on the process of humanization. Humanization is at the heart of education, but modern educational practices are becoming increasingly pragmatic. Rather than focusing on developing students' social awareness and empathy, contemporary educational practices place greater emphasis on industrial and labor market development. Furthermore, if technology becomes the primary focus of education, this could potentially contribute to the dehumanization of education. Therefore, reconstructing the study of philosophy is necessary to create a critical framework that balances technological advancement with a humanistic approach to education.

4.3 Reconstruction of Sociological Foundations

The content analysis further reveals that educational disruption is strongly associated with sociological transformation rather than technological change alone. Across the reviewed studies, unequal

digital access, changes in communication patterns, and new forms of social interaction consistently emerged as recurring issues influencing educational quality ([Livingstone & Helsper, 2010](#); [Unesco, 2021](#)).

Education has always evolved with the emergence of new technologies, but the rapid development of digital technology has impacted societal interaction patterns, including the way education is conducted. Changes in student learning culture have become more individualistic and technology-dependent due to social media, online learning, and the digitalization of learning systems ([Livingstone & Helsper, 2010](#)).

Students are becoming more dependent on technology for learning. Despite more flexible learning options and easier access to information, the negative effects of learning environments on social interaction, empathy, and solidarity hinder the development of constructive educational relationships. Education, like other social institutions, is a product of specific organizations, cultures, and patterns of societal relationships. Therefore, while the focus of digital change in education is technology, it must also be understood as a change in the social relationships that exist within education. One of the most serious challenges posed by this phenomenon is the digital divide, which describes the inequality of educational opportunities caused by the unequal availability of educational resources in certain communities.

According to [Unesco \(2021\)](#) lack of access to technology and low digital literacy skills can create additional barriers to equitable education in economically and geographically disadvantaged communities. Furthermore, the evolution of digital technology and social media has been linked to the emergence and proliferation of several social problems such as the spread of misinformation, cyberbullying, online intolerance, and the erosion of youth morals. These issues indicate that rapid technological advancements have not been accompanied by the expected increase in ethical and social responsibility among students. Therefore, it is necessary to reaffirm the sociological foundations of education to develop responsible digital literacy, ethical use of social media, and social responsibility among students so that technology can be used safely ([Banks, 2015](#)).

The persistence of digital inequalities highlights that educational disruption is not only a technological issue but also a matter of social justice. Unequal access to technological resources may exacerbate existing educational disparities and limit opportunities for vulnerable populations ([Unesco, 2021](#)).

Based on the analytical synthesis presented above, the proposed reconstruction of Educational Foundations can be operationalized into several curriculum and pedagogical components, as summarized in Table 2.

Table 2. Operationalization of the Reconstruction of Educational Foundations

Dimension	Existing Orientation	Reconstruction Proposed	Operational Implementation
Philosophy	Classical educational philosophy	Humanistic and critical philosophy	Revision of course learning outcomes emphasizing ethics, reflective thinking, and educational values
Sociology	Society and education	Digital citizenship and educational equity	Integration of digital inclusion, civic responsibility, and social justice topics
Pedagogy	Teacher-centered learning	Student-centered reflective pedagogy	Project based learning, collaborative learning, reflective teaching
Digital Literacy	ICT introduction	Digital competence and AI literacy	Digital literacy modules, AI awareness, responsible technology use
Character Education	General moral education	Digital ethics and media literacy	Cyber ethics, media literacy, responsible online participation

Dimension	Existing Orientation	Reconstruction Proposed	Operational Implementation
Teacher Competence	Knowledge transmission	Facilitator, mentor, innovator	Digital pedagogy training and reflective professional development

The operationalization presented in Table 2 demonstrates that the reconstruction of Educational Foundations extends beyond conceptual reform and requires concrete adjustments to curriculum content, learning outcomes, and pedagogical practices. The analytical synthesis indicates that each dimension of Educational Foundations should be linked to practical competencies required in the digital era, including digital literacy, ethical reasoning, reflective pedagogy, and professional adaptability. Consequently, Educational Foundations should function not only as a theoretical course but also as a transformative framework that prepares prospective teachers to address educational disruption in diverse educational contexts ([Falloon, 2020](#); [Fullan, 2013](#)).

4.4 Reconstructing the Role of Teachers in Modern Education

The analytical synthesis indicates that teacher professionalism constitutes one of the most significant dimensions requiring reconstruction within Educational Foundations. Across the reviewed literature, teachers are consistently portrayed as facilitators of learning, reflective practitioners, and agents of educational transformation rather than mere transmitters of knowledge ([Fullan, 2013](#); [Trust & Whalen, 2020](#)).

Digital transformation has impacted the position and role of teachers in the contemporary educational landscape. Due to the accessibility of the internet and its various related tools, teachers can no longer act as the sole custodians of knowledge ([Trust & Whalen, 2020](#)). This shift has led to a paradigm shift in learning, from teacher-driven to collaborative learning. In this role, teachers act as facilitators, mediators, motivators, and guides in learning. However, as evidenced by various studies, teachers lack the necessary level of self confidence to keep pace with technological developments, or in other words, the evolving nature of educational technology. Many teachers still face challenges related to technology integration in learning due to weak digital competencies, inadequate training, and pedagogical gaps in technology use ([Sirait, 2024](#)).

Therefore, the digital transformation in education suggests that the focus must shift from infrastructure alone to the ongoing development of teachers' professional competencies. In this regard, the role of the Fundamentals of Education course is crucial in fostering awareness of the paradigm shift in modern education among prospective teachers. The study of Fundamentals of Education aims to prepare future educators to face societal challenges, including social, cultural, and technological ones, even if they are initially unnoticed. Modern educators must also be encouraged, in addition to adapting to society and cutting-edge technology (humanistic and innovative), to become reflective agents of social change ([Fullan, 2013](#)). Beyond technological proficiency, teachers require broader digital competencies that include pedagogical decision-making, ethical awareness, collaborative practices, and the ability to facilitate meaningful learning experiences using technology ([Falloon, 2020](#)). Recent evidence further indicates that the emergence of artificial intelligence, particularly large language models, expands the scope of teacher competencies beyond digital literacy toward AI literacy, critical evaluation, and ethical technology use. Rather than replacing teachers, AI should function as a pedagogical support tool that enhances personalized learning, instructional design, assessment, and feedback while maintaining human oversight and reflective pedagogical decision-making ([Kasneci et al., 2023](#)).

4.5 Strengthening Character Education in the Era of Society 5.0

The literature synthesis further demonstrates that character education remains a critical component of Educational Foundations reconstruction in the Society 5.0 era. Rather than focusing solely on conventional moral instruction, the reviewed studies consistently emphasize digital citizenship, ethical technology use, media literacy, and civic responsibility as essential educational outcomes ([Banks, 2015](#); [Livingstone & Helsper, 2010](#)).

The impact of emerging digital technologies on the behavioral patterns and outlooks of children and adolescents is profound. The emergence of phenomena such as cyberbullying, digital intolerance, the spread of disinformation, and misconduct on social platforms illustrates that technological advancements have come without commensurate improvements in student character ([Livingstone & Helsper, 2010](#)).

This phenomenon highlights a major obstacle that contemporary education must overcome. Modern educators must facilitate the development of students' inner moral compass and sense of civic responsibility, enhanced by their technological prowess. The integration of character education is crucial during the Society 5.0 era because the primary focus of the overall education system must be the development of students' intellectual abilities alongside the inseparable development of moral character, social awareness, and ethical reasoning in the application of technology.

Character education in digital societies should therefore encompass ethical reasoning, responsible participation in online environments, empathy, and critical engagement with information to support democratic citizenship in increasingly interconnected communities ([Banks, 2015](#)). Character development cannot be achieved exclusively through conventional teaching and learning approaches; it must permeate the organizational culture of schools, the modeling of character by educators, and the comprehensive assimilation of character education throughout the curriculum ([Freire, 2005](#)). In this regard, the need to overhaul the Foundations of Education in the modern era is to reaffirm the centrality of humanistic philosophy in education in the context of the rapid advancement of digital technology. Education must maintain its focus on humans in order to address the challenges posed by relentless technological progress, particularly the loss of human values and the dehumanization of the educational process ([Banks, 2015](#)). Thus, contemporary education must use methodologies that are technologically adaptive and capable of ensuring the existence of harmony between technology and human ethos.

4.6 Theoretical Implications

The analytical synthesis conducted in this study demonstrates that Educational Foundations should no longer be understood merely as a theoretical discipline introducing philosophical, sociological, and psychological perspectives on education. Instead, the findings indicate that Educational Foundations should be reconstructed as an integrative framework that connects philosophical reflection, sociological analysis, digital transformation, teacher professionalism, digital ethics, and character education within a coherent conceptual model. This synthesis extends previous studies, which generally discussed these dimensions separately, by integrating them into a multidimensional framework capable of explaining educational disruption in the digital era ([Freire, 2005](#); [Mukul & Büyüközkan, 2023](#)).

From a theoretical perspective, the proposed reconstruction broadens the scope of Educational Foundations from its traditional orientation toward a transformative discipline that supports critical reflection, adaptive pedagogy, digital citizenship, and ethical technology use. The findings therefore reinforce the argument that educational transformation should balance technological innovation with humanistic values, social justice, and lifelong learning so that educational development remains centered on holistic human development rather than technological efficiency alone ([Schleicher, 2018](#); [Zhao & Watterston, 2021](#)).

4.7 Practical Implications for Educational Foundations Courses

The analytical synthesis also provides practical implications for curriculum development in Educational Foundations courses, particularly in teacher education institutions. Based on the reconstructed framework presented in Table 2, curriculum developers may update course learning outcomes by integrating digital literacy, digital citizenship, educational ethics, artificial intelligence awareness, reflective pedagogy, and student-centered learning approaches. Such revisions would enable Educational Foundations courses to become more responsive to educational disruption while maintaining their philosophical and humanistic orientation ([Falloon, 2020](#); [Fullan, 2013](#)).

In addition, learning activities may emphasize project-based learning, collaborative inquiry, reflective discussion, case based analysis, and ethical evaluation of educational technologies. These approaches support the development of prospective teachers who possess not only pedagogical competence but

also digital competence, reflective thinking, professional ethics, and social responsibility. Consequently, Educational Foundations can function not only as a theoretical course but also as a strategic foundation for preparing future educators capable of responding to educational transformation in the era of digital disruption ([Sirait, 2024](#); [Trust & Whalen, 2020](#)).

5. Conclusion

5.1 Conclusions

This study demonstrates that educational disruption in the digital era requires the reconstruction of Educational Foundations as a multidimensional framework rather than merely a theoretical discipline. The analytical synthesis identified four key dimensions requiring reconstruction: philosophical, sociological, pedagogical, and digital ethical perspectives. These findings indicate that contemporary educational challenges including digital transformation, unequal access to education, limited digital literacy, curriculum reform, and the changing role of teachers cannot be adequately addressed through technological adaptation alone but require a more critical, contextual, and humanistic educational foundation.

The conceptual contribution of this study lies in proposing an integrated reconstruction framework that repositions Educational Foundations as a transformative discipline connecting philosophical reflection, sociological analysis, teacher professionalism, digital literacy, digital ethics, and character education. Unlike previous studies that have generally examined these dimensions separately, this study synthesizes them into a coherent conceptual framework for responding to educational disruption in the era of digital transformation and Society 5.0.

Practically, the findings suggest that Educational Foundations courses in higher education should be redesigned to integrate reflective pedagogy, digital literacy, digital citizenship, educational ethics, and student-centered learning approaches. Such reconstruction is expected to strengthen the preparation of prospective teachers who are adaptive to technological change while maintaining the humanistic values that remain central to educational practice. Overall, these findings reinforce the importance of developing Educational Foundations in a more contextual, interdisciplinary, reflective, and transformative manner to support sustainable educational transformation in the twenty-first century.

5.2 Research Limitations

This study has several limitations that should be acknowledged. First, the research employed a library research method relying exclusively on secondary data obtained from academic journals, books, and policy documents. Consequently, the findings are conceptual and theoretical in nature and do not directly reflect empirical conditions experienced by educators, students, and educational institutions in diverse educational settings.

Second, the study focused primarily on the philosophical, sociological, and humanistic dimensions of Educational Foundations in responding to digital transformation. Therefore, it did not comprehensively examine the practical implementation of reconstructed Educational Foundations courses in higher education curricula or their impact on prospective teachers' competencies.

Third, the literature reviewed was limited to publications indexed in Google Scholar, DOAJ, Scopus, and ScienceDirect. Although these sources are considered credible, there may be relevant studies, policy reports, or emerging educational practices that were not included in the analysis.

Finally, this study discussed educational disruption from a general perspective and did not specifically investigate differences across educational levels, geographical regions, or institutional contexts. Consequently, the findings may not fully capture the complexity of digital transformation challenges faced by various educational stakeholders.

Despite these limitations, the study provides an important conceptual framework for reconstructing Educational Foundations as a critical and transformative discipline capable of responding to the challenges of education in the digital era.

5.3 Suggestions and Directions for Future Research

Based on the findings of this study, several recommendations are proposed for future research. First, empirical studies involving lecturers, teacher education students, school teachers, and educational policymakers are needed to examine how the reconstruction of Educational Foundations can be implemented in real educational contexts and how it influences professional competencies and educational practices.

Second, future researchers are encouraged to employ mixed-methods or case-study approaches to explore the effectiveness of integrating digital literacy, character education, educational philosophy, and sociological perspectives into Educational Foundations courses. Such studies would provide deeper insights into the practical relevance of the proposed reconstruction model.

Third, comparative studies across different universities, regions, or countries would contribute to understanding how educational foundations respond to digital transformation within diverse cultural, social, and technological environments. This would strengthen the generalizability of theoretical and practical recommendations.

Fourth, future research should investigate emerging issues associated with Society 5.0, artificial intelligence, learning analytics, digital ethics, and educational sustainability. These themes are increasingly relevant and may further enrich the development of Educational Foundations as a multidisciplinary field of study.

Finally, future studies should develop and validate innovative curriculum models that integrate humanistic values, technological competencies, critical pedagogy, and transformative learning approaches to prepare future educators for the challenges of 21st-century education.

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Author Contributions

MPK contributed to the conceptualization of the study, data analysis, and manuscript preparation. YAH contributed to the research methodology, data interpretation, and manuscript review. SPD participated in data collection, analysis, and manuscript editing. US contributed to data collection and literature review. HH supervised the research process and critically reviewed the manuscript. All authors have read and approved the final version of the manuscript.

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