

## DIGITAL EDUCATION AS A SOCIAL AND POLITICAL SPACE: POWER, JUSTICE, AND TRANSFORMATION

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### ABSTRACT

The rapid expansion of digital technologies has transformed education in ways that extend beyond technical innovation, reshaping pedagogical practices, governance structures, and the production of knowledge. However, digital education is still predominantly conceptualised through instrumental and technocratic frameworks that prioritise efficiency and performance while neglecting issues of power, justice, and social transformation. This article aims to reconceptualise digital education as a social and political space by developing a critical–transformational paradigm grounded in contemporary educational theory. Employing a qualitative critical literature review, this study analyses and synthesises scholarly works published between 2020 and 2025 that address digital education, critical pedagogy, platformisation, and digital justice. Through critical reading, thematic coding, and conceptual synthesis, the analysis identifies three dominant constructions of digital education: the instrumental-technological, the pedagogical ecosystem, and the socio-political space. The findings reveal that while instrumental and ecosystem approaches contribute to operational understanding, they remain insufficient to address the structural inequalities and power relations embedded in digital education. The study proposes a critical–transformational paradigm that integrates ontological, epistemological, and axiological dimensions, positioning digital education as a value-laden practice oriented toward justice, agency, and social change. This paradigm contributes to theoretical development in digital education and offers a reflective foundation for policies and practices that prioritise pedagogical autonomy, digital justice, and democratic participation.

Keyword: digital education; power; digital justice; transformation

### INTRODUCTION

The rapid expansion of digital technologies over the past decade has fundamentally reshaped the educational landscape, not merely at the level of instructional tools but also in how knowledge is produced, mediated, and legitimised. Digital education is no longer confined to integrating technology and online platforms into teaching and learning. Rather, it has evolved into a complex socio-technical formation in which pedagogical practices, public policies, economic interests, and social values intersect. In the post-pandemic context, the acceleration of digitalisation has further reinforced the role of digital education as a structural force reshaping educational governance, redefining teacher professionalism, and repositioning learners within increasingly data-driven learning environments (Williamson & Hogan, 2020; Teräs et al., 2020).

Contemporary scholarship on digital education can be broadly mapped into three dominant strands. The first strand is characterised by an instrumental and technocratic orientation, where digital technologies are primarily understood as tools to enhance efficiency, flexibility, and learning outcomes. Research within this strand focuses on online learning platforms, learning analytics, artificial intelligence, and personalised learning systems, often evaluating their effectiveness in improving student performance and access to education (Winata & Nugraha, 2024; Yusuf & Kamariah, 2025). While this body of work has contributed significantly to practical innovation, it frequently assumes technological neutrality and progress, thereby underplaying the normative, ethical, and political dimensions of digital education.

A second strand conceptualises digital education as a pedagogical ecosystem shaped by interactions among technologies, institutions, policies, and socio-cultural contexts. Studies within this perspective emphasise digital governance, institutional readiness, and the entanglement of educational technologies with policy agendas and organisational structures

(Williamson, 2020; van Dijck, 2018). This approach offers a more holistic understanding of digital education. However, it often remains descriptive, focusing on system dynamics without sufficiently interrogating the power relations and ideological interests embedded within these ecosystems.

Over the past five years, a third and increasingly influential strand has emerged, grounded in critical and postdigital perspectives. Scholars within this tradition argue that digital education should be understood as a social and political space, rather than a neutral or purely technical domain. From this viewpoint, educational technologies are embedded in neoliberal logics, platform capitalism, and datafication processes that reshape educational values, practices, and inequalities (Knox, 2019; Selwyn, 2021). Digital education, therefore, becomes an arena of contestation where pedagogical aims, market interests, and state governance intersect, often privileging efficiency, accountability, and competition over equity and democratic participation (Pangrazio et al., 2020).

Despite the growing body of critical scholarship, the implementation of digital education policies and practices in many contexts remains dominated by instrumental rationales. Digitalisation is frequently promoted as a universal solution to educational challenges such as access, quality, and efficiency, without adequate consideration of existing structural inequalities. Empirical studies have shown that disparities in infrastructure, digital literacy, and institutional support mean that digital education often mirrors—and in some cases amplifies—social and economic inequalities rather than mitigating them (Farhatin, 2025; Sinambela et al., 2024).

Moreover, the increasing platformisation of education has introduced new forms of power and control into educational spaces. Learning management systems, educational applications, and data-driven platforms are largely developed and governed by private technology corporations, whose commercial interests shape curricular design, assessment practices, and data governance. As van Dijck (2018) argues, platforms do not merely mediate educational activities but actively configure social relations and institutional norms. In this context, teachers and educational institutions often become dependent on technological infrastructures over which they have limited control, potentially undermining pedagogical autonomy and contextual sensitivity (Warastuti et al., 2025).

The urgency of this study lies in the need to move beyond fragmented, predominantly technical approaches to digital education towards a coherent paradigm that foregrounds its social and political dimensions. Without such a framework, digital education risks being reduced to a modernisation project driven by technological optimism and market logic, rather than a transformative educational endeavour grounded in justice, ethics, and human development. Critical scholars have warned that unreflective digitalisation may contribute to the commodification of education, the standardisation of learning practices, and the marginalisation of vulnerable groups (Selwyn, 2021; Teräs et al., 2020). In response to these concerns, critical–transformational perspectives emphasise education as an emancipatory practice that fosters critical consciousness and social change. From this standpoint, digital education is not simply about adapting to technological innovation but about interrogating whose interests technologies serve, how power is exercised through digital systems, and how education can be reoriented towards equity and democratic participation (Pangrazio et al., 2020; Wierman, 2025).

Knox (2019) introduced the concept of postdigital education, highlighting the entanglement of digital and non-digital practices and challenging binary understandings of technology in education. While this work offers a valuable philosophical lens, it remains largely theoretical and does not fully articulate the implications of postdigital conditions for justice-oriented educational transformation. Teräs et al. (2020) critically examined the rise of “edtech solutionism” during and after the COVID-19 pandemic, demonstrating how educational technologies were framed as rapid fixes to systemic problems. Their analysis effectively exposes the power dynamics between technology providers and educational institutions; however, it falls short of proposing an integrative paradigm to guide long-term theoretical and policy

development in digital education. Pangrazio et al. (2020) focused on critical digital literacy as a pedagogical response to platformisation and datafication in education. Although their work makes an important contribution to classroom practice and learner agency, it does not extend its analysis to the disciplinary paradigms that underpin digital education as a field of knowledge.

A critical synthesis of recent literature reveals that research on digital education remains fragmented across instrumental, ecosystem-based, and critical approaches. Existing critical studies often address issues of power, platformisation, or digital literacy in isolation, without integrating these dimensions into a coherent paradigmatic framework. Consequently, there is a lack of comprehensive theoretical models that conceptualise digital education simultaneously as a pedagogical, social, and political phenomenon.

The novelty of this study lies in its effort to conceptualise digital education as a social and political space through a critical–transformational paradigm. Unlike previous studies that focus on specific aspects of digital education, this article offers an integrative conceptual framework that connects power relations, digital justice, and pedagogical transformation. By situating digital education within the ontological, epistemological, and axiological dimensions, the study advances a more holistic understanding of the field as an object of educational inquiry.

Accordingly, this study aims to examine and formulate a critical–transformational paradigm of digital education that conceptualises digital learning environments as social and political spaces shaped by power relations, justice concerns, and transformative aspirations. Through a critical literature review of recent scholarship, this article seeks to contribute to the theoretical development of digital education while providing a reflective foundation for policies and practices that prioritise equity, pedagogical autonomy, and social transformation.

## **METHODOLOGY**

This study is situated within a qualitative research paradigm that emphasises critical interpretation, theoretical synthesis, and reflexive inquiry. Given the paradigmatic and conceptual nature of the research objective, the study employs a critical literature review as its primary methodological approach. This method is particularly appropriate for research that seeks to interrogate dominant assumptions, examine ideological underpinnings, and generate integrative conceptual frameworks rather than to measure causal relationships or empirical effectiveness. In this study, digital education is approached not as a neutral technological innovation but as a socially and politically constructed phenomenon shaped by power relations, institutional interests, and normative values.

The fragmented nature of existing scholarship on digital education informs the decision to conduct a critical literature review. While a substantial body of research addresses technological effectiveness and system implementation, fewer studies engage systematically with questions of power, justice, and transformation at the level of educational theory. A critical review enables these disparate strands to enter dialogue, allowing the study to examine not only what is known about digital education but also how knowledge about it is produced, legitimised, and contested. In this sense, the method functions as both an analytical and epistemological strategy aligned with the study's critical–transformational orientation.

The data corpus for this study comprises peer-reviewed journal articles, scholarly books, and academically grounded policy analyses on digital education, critical pedagogy, platformisation, and digital justice. The literature was purposively selected from publications produced between 2020 and 2025, a period marked by the accelerated digitalisation of education following the COVID-19 pandemic and the rapid expansion of platform-based educational technologies. This temporal focus ensures that the analysis reflects contemporary theoretical debates and emerging critiques relevant to current educational contexts.

Explicit inclusion criteria guided the literature selection process. Selected works were required to move beyond purely technical or instrumental discussions of digital education and to engage substantively with its social, political, or ethical dimensions. Studies focusing

exclusively on implementation issues without theoretical reflection were excluded from the core analysis. This purposive strategy was essential to maintaining analytical coherence and ensuring alignment with the study's critical objectives. An overview of the literature selection profile and analytical focus is presented in Table 1.

Table 1. Literature Selection Profile

| Aspect             | Description  |
|--------------------|--|
| Research design    | Qualitative, critical literature review                |
| Publication period | 2020–2025  |
| Source types       | Peer-reviewed journal articles, scholarly books        |
| Analytical focus   | Digital education as a social and political space      |
| Theoretical lenses | Critical pedagogy, postdigital theory, digital justice |
| Intended outcome   | Development of a critical–transformational paradigm    |

Following the selection of relevant literature, analysis proceeded through an iterative process of critical reading and thematic coding. Each text was read closely to identify central arguments, conceptual frameworks, and implicit assumptions regarding the role of technology in education. Particular attention was paid to how digital education was framed—whether as a neutral tool, a systemic solution, or a site of power and contestation—and whose interests were prioritised within these framings.

Thematic coding was then employed to identify recurring analytical categories across the literature. Rather than treating themes as fixed variables, coding focused on mapping conceptual tensions and intersections among different perspectives. Key themes that emerged included instrumentalism, platformisation, power relations, digital justice, and transformational pedagogy. These themes served as critical lenses for examining how digital education is theorised and practised across different contexts. The thematic coding framework used in this study is summarised in Table 2.

Table 2. Thematic Coding Framework

| Core Theme                | Analytical Orientation                | Key Issues Addressed                  |
|---------------------------|---------------------------------------|---------------------------------------|
| Instrumentalism           | Technocratic rationality              | Efficiency, optimisation, performance |
| Platformisation           | Political economy of edtech           | Data governance, corporate power      |
| Power relations           | Structural and institutional dynamics | State–market–education nexus          |
| Digital justice           | Normative and ethical concerns        | Equity, inclusion, access             |
| Transformational pedagogy | Emancipatory education                | Critical consciousness, agency        |

The final stage of analysis involved conceptual synthesis, in which the coded themes were systematically compared and integrated to construct a coherent critical–transformational paradigm of digital education. This stage moved beyond thematic description toward theory-building, examining how instrumental, ecosystem-based, and critical approaches intersect and where their limitations lie. Through this synthesis, digital education is conceptualised as a social and political space grounded in ontological, epistemological, and axiological dimensions. Ontologically, digital education is understood as a socially constructed reality shaped by power relations; epistemologically, as a domain where technologies and institutional interests mediate knowledge production; and axiologically, as a value-laden practice oriented toward justice and social transformation. The analytical stages underpinning this synthesis are outlined in Table 3.

Table 3. Stages of Critical Analysis

| Analytical Stage     | Key Activity                            | Analytical Purpose                             |
|----------------------|---|--|
| Critical reading     | Interrogating assumptions and arguments | Expose dominant discourses                     |
| Thematic coding      | Identifying recurring patterns          | Map conceptual tensions                        |
| Conceptual synthesis | Integrating themes                      | Formulate a critical transformational paradigm |

To ensure analytical rigor and trustworthiness, the study employed strategies of transparency, reflexivity, and cross-referencing. Explicit documentation of selection criteria and analytical stages enhances methodological transparency, while sustained reflexive engagement

with the literature mitigates the risk of uncritical interpretation. However, the study does not aim for empirical generalisation; its rigor lies in the depth of theoretical engagement, the coherence of its conceptual synthesis, and the alignment between research aims, methodological choices, and analytical outcomes.

## RESULT AND DISCUSSION

The critical analysis of contemporary literature reveals that digital education is not a singular or neutral phenomenon, but a contested field shaped by competing epistemological assumptions, political interests, and normative orientations. Through thematic coding and conceptual synthesis, this study identifies three major conceptual constructions of digital education that dominate current scholarship, as well as the emergence of a critical–transformational paradigm that integrates and transcends these constructions. The results are presented as interrelated theoretical findings rather than discrete empirical outcomes.

### Digital Education as an Instrumental-Technological Project

The first and most dominant construction of digital education identified in the literature conceptualises technology as an instrumental solution to educational challenges. Within this framing, digital tools are primarily valued for their capacity to enhance efficiency, scalability, and measurable learning outcomes. Studies adopting this perspective often emphasise online learning platforms, learning analytics, artificial intelligence, and personalised learning systems as mechanisms for optimising educational delivery (Yusuf & Kamariah, 2025; Winata & Nugraha, 2024). From a critical perspective, this instrumental framing is underpinned by a technocratic rationality that treats education as a system to be managed and optimised. The analysis reveals that such approaches frequently marginalise pedagogical judgment, reduce teaching to system compliance, and position learners as data points rather than active subjects. While instrumental digital education is often framed as innovative and progressive, the findings indicate that it risks narrowing the purpose of education to performance indicators and technical efficiency, thereby obscuring ethical, social, and political considerations.

### Digital Education as a Pedagogical and Institutional Ecosystem

A second strand of literature conceptualises digital education as a complex ecosystem constituted by interactions among technologies, institutions, policies, and socio-cultural contexts. This perspective moves beyond purely technical considerations by recognising that educational technologies are embedded within governance structures and organisational arrangements that shape their adoption and use (Williamson, 2020). The results show that ecosystem-based approaches provide valuable insights into the systemic nature of digital education, particularly regarding policy design, institutional capacity, and infrastructural readiness. However, the analysis also reveals a key limitation: many ecosystem-oriented studies remain largely descriptive and insufficiently critical. While they map relationships between actors and systems, they often fail to interrogate whose interests these systems serve or how power is exercised through them. As a result, the political and ideological dimensions of digital education remain under-theorised within this strand.

### Digital Education as a Social and Political Space

The third and most analytically significant finding concerns the conceptualisation of digital education as a social and political space. Critical and postdigital scholarship consistently demonstrates that educational technologies are embedded in broader political economies characterised by platform capitalism, datafication, and neoliberal governance (Selwyn, 2021; van Dijck, 2018; Knox, 2019). Within this framing, digital education is understood as an arena in which power relations are enacted and contested. The analysis indicates that platform-based education restructures pedagogical relations by embedding algorithmic logics into curriculum design, assessment, and student monitoring. These processes shift authority away from educators toward technological systems and corporate actors, potentially undermining pedagogical autonomy and contextual responsiveness. Moreover, the literature highlights that

digital education often reproduces existing social inequalities through uneven access to infrastructure, differential digital literacy, and exclusionary policy frameworks (Sinambela et al., 2024; Farhatin, 2025). Importantly, the findings show that critical scholarship does not position digital education as inherently oppressive, but as ambivalent—capable of both reproducing and challenging inequality depending on how it is theorised, governed, and practised. This ambivalence underscores the need for a paradigmatic shift that explicitly foregrounds justice, agency, and transformation.

Table 4. Dominant Conceptual Constructions of Digital Education

| Conceptual Construction    | Primary Focus                                | Core Limitations                             |
|----------------------------|--|--|
| Instrumental-technological | Efficiency, performance, optimisation        | Reduction of education to technical outcomes |
| Pedagogical ecosystem      | Systems, policy, and institutional readiness | Limited critique of power and ideology       |
| Social and political space | Power, inequality, governance                | Often fragmented across isolated issues      |

### Emergence of a Critical–Transformational Paradigm

Beyond these three constructions, the synthesis reveals the emergence of a critical–transformational paradigm that integrates critical pedagogy, postdigital theory, and justice-oriented educational thought. This paradigm reconceptualises digital education not as a tool or system, but as a value-laden social practice oriented toward emancipation and social change. The results indicate that three interrelated dimensions characterise this paradigm. Ontologically, digital education is understood as a socially constructed reality shaped by power relations rather than as a neutral technological environment. Epistemologically, knowledge in digital education is seen as mediated by platforms, algorithms, and institutional interests, requiring critical interrogation rather than passive consumption. Axiologically, the paradigm foregrounds values of digital justice, inclusion, and democratic participation as central educational goals.

This critical–transformational paradigm reframes educators’ roles as reflective and autonomous pedagogical agents who actively negotiate and contest technological structures. Similarly, learners are positioned as active subjects capable of developing critical digital literacy and participating in the co-construction of knowledge. The findings suggest that such a paradigm offers a more comprehensive and ethically grounded framework for understanding and guiding digital education in contemporary contexts.

Table 5. Core Characteristics of the Critical–Transformational Paradigm

| Dimension       | Analytical Orientation              | Implications for Digital Education     |
|-----------------|-------------------------------------|--|
| Ontological     | Education as socially constructed   | Technology embedded in power relations |
| Epistemological | Knowledge as mediated and contested | Emphasis on critical digital literacy  |
| Axiological     | Justice and transformation          | Equity, inclusion, and agency          |

### Integrative Synthesis of Findings

The overall findings demonstrate that dominant approaches to digital education remain insufficient for addressing the ethical and political challenges posed by rapid digitalisation. Instrumental and ecosystem-based perspectives, while valuable, fail to provide a normative foundation that guides education toward social justice and transformation. In contrast, the critical–transformational paradigm identified in this study offers an integrative framework that aligns technological innovation with pedagogical purpose and societal values. This synthesis positions digital education as a contested social space in which educational futures are actively negotiated. The results thus provide a conceptual foundation for reorienting digital education research, policy, and practice toward more reflective, democratic, and transformative ends.

## DISCUSSION

This study advances contemporary debates on digital education by demonstrating that dominant conceptualisations remain insufficient for addressing the ethical, political, and social challenges posed by rapid digitalisation. The findings confirm that while instrumental and ecosystem-based approaches contribute to technological and organisational understanding, they fall short in explaining how power, ideology, and justice shape digital education. By conceptualising digital education as a social and political space, this study aligns with and extends critical traditions in educational theory, offering a more comprehensive framework for understanding digital transformation.

The prevalence of instrumental rationality in digital education reflects broader critiques within critical social theory, particularly Habermas's argument concerning the colonisation of educational practices by technical and administrative logics. In digital education, this manifests through performance metrics, data-driven governance, and standardised platforms that prioritise efficiency over communicative and emancipatory purposes (Selwyn, 2021). The results suggest that such rationality risks reducing education to a managed system rather than a dialogical and value-oriented practice.

From a critical pedagogical perspective, the findings resonate strongly with Freire's conception of education as a practice of freedom. When digital technologies are adopted without critical reflection, they may reproduce a digital form of "banking education," positioning learners as passive recipients of algorithmically curated content. In contrast, the critical–transformational paradigm identified in this study foregrounds dialogue, agency, and reflexivity, positioning digital education as a space for cultivating critical consciousness and social engagement (Wierman, 2025).

The results also extend postdigital theory by demonstrating that digital education cannot be meaningfully separated from its material, political, and cultural conditions. Postdigital scholars argue that education is no longer simply "digital" or "non-digital," but deeply entangled with infrastructures, data practices, and institutional power (Knox, 2019). This study contributes to postdigital scholarship by explicitly integrating justice and transformation as core paradigmatic concerns, rather than treating them as secondary ethical considerations.

A central contribution of this study lies in its articulation of platformisation as a key mechanism through which power operates in digital education. Consistent with political economy analyses, the findings demonstrate that digital platforms function not merely as neutral tools but as governing infrastructures that shape pedagogical norms, curricular structures, and assessment practices (van Dijck, 2018; Williamson, 2020). Through algorithmic governance and datafication, authority is increasingly shifted from educators and public institutions toward corporate actors.

This redistribution of power has profound implications for pedagogical autonomy and democratic governance in education. When educational decision-making is embedded within proprietary platforms, transparency and accountability become limited, and educators' professional judgment risks being subordinated to system logic. However, the findings also highlight that digital education remains an ambivalent space. While platforms may constrain pedagogical agency, they can also be appropriated and contested by educators and learners who engage critically with digital infrastructures (Pangrazio et al., 2020).

The discussion underscores the need to rethink digital education policy beyond infrastructure provision and technology adoption. Current policy frameworks often equate digital progress with access and connectivity, overlooking deeper issues of participation, governance, and equity. The critical–transformational paradigm articulated in this study calls for policies grounded in digital justice, understood as the fair distribution of digital resources, meaningful participation in digital learning, and protection from exploitative data practices (Selwyn, 2021; Williamson & Hogan, 2020). Policies informed by this paradigm should prioritise pedagogical autonomy, ethical data governance, and inclusive decision-making processes. This

includes involving educators and learners as active stakeholders in digital policy design, rather than positioning them as passive implementers of technological systems. In this sense, digital education policy becomes not merely a technical or administrative exercise, but a normative and political project aligned with democratic educational values.

At the practice level, the findings suggest a fundamental reconfiguration of roles in digital education. Educators are repositioned as critical mediators of technology, responsible for aligning digital tools with pedagogical and ethical goals. This challenges dominant narratives that frame teachers primarily as technology users or content deliverers. Learners, meanwhile, are conceptualised as active subjects capable of developing critical digital literacy and engaging reflexively with digital environments (Pangrazio et al., 2020). Such a reorientation moves digital education beyond skill acquisition toward transformational learning, in which technology fosters critical awareness, social responsibility, and collective agency. This perspective aligns digital education with broader educational aims related to citizenship, democracy, and social transformation.

Despite its theoretical contributions, this study has several limitations. First, as a conceptual and literature-based inquiry, it does not empirically examine how the critical–transformational paradigm is enacted in specific institutional or national contexts. Consequently, the practical implications of the paradigm remain inferential rather than evidence-based. Second, the literature reviewed is predominantly drawn from international and English-language scholarship, which may limit the inclusion of local, indigenous, or context-specific perspectives on digital education. This may constrain the paradigm’s applicability across diverse educational settings, particularly in the Global South. Third, the study does not provide detailed analyses of specific digital education policies or platforms. While this was a deliberate methodological choice, it limits the ability to assess how abstract paradigmatic principles translate into concrete governance arrangements.

Future research should empirically investigate how critical transformational principles are operationalised in digital education policy and practice. Qualitative case studies, critical ethnographies, and participatory research designs could illuminate how educators and learners negotiate power relations within platform-based educational systems. Further studies should also explore alternative governance models that prioritise public values, open technologies, and data justice. Comparative research across institutional and national contexts would deepen understanding of how different policy environments shape the possibilities for transformative digital education. Finally, interdisciplinary research integrating educational theory with political economy, science and technology studies, and data ethics would strengthen the conceptual foundations of digital education as a social and political space.

## CONCLUSION

This study demonstrates that digital education cannot be adequately understood as a neutral technological innovation or merely as an institutional delivery system. Instead, digital education must be conceptualised as a social and political space shaped by power relations, governance structures, and normative values. By critically synthesising contemporary scholarship, the study shows that dominant instrumental and ecosystem-based approaches remain limited in addressing issues of justice, agency, and transformation. In response, the proposed critical–transformational paradigm reframes digital education as a value-laden practice grounded in ontological, epistemological, and axiological commitments, positioning technology as a means of emancipation rather than solely as a means of efficiency.

The study advances digital education theory by offering an integrative framework that connects power, digital justice, and pedagogical transformation within a coherent paradigm. This framework provides a critical foundation for reorienting digital education research, policy, and practice toward more democratic, ethical, and inclusive directions. By foregrounding pedagogical autonomy, critical digital literacy, and participatory governance, the paradigm

underscores the need to align technological innovation with the broader educational mission of human development and social transformation.

## REFERENCES

- Farhatin. (2025). Digital education access disparities exist in remote and underdeveloped regions. *Maliki Interdisciplinary Journal*, 3(1), 1–12.
- Knox, J. (2019). What does the “postdigital” mean for education? Three critical perspectives on the digital, with implications for educational research and practice. *Postdigital Science and Education*, 1(2), 357–370. <https://doi.org/10.1007/s42438-019-00045-y>
- Moleong, L. J. (2022). *Qualitative research methodology* (Revised ed.). PT Remaja Rosdakarya.
- Pangrazio, L., Godhe, A. L., & Ledesma, A. G. L. (2020). What is digital literacy? A comparative review of publications across three language contexts. *E-Learning and Digital Media*, 17(6), 442–459. <https://doi.org/10.1177/2042753020946291>
- Selwyn, N. (2011). *Education and technology: Key issues and debates*. Continuum.
- Selwyn, N. (2021). *Should robots replace teachers? AI and the future of education*. Polity Press.
- Sinambela, S. M., Lumbantobing, J. N. Y., Saragih, M. D., Mangunsong, A. F., Nisa, C., Simanjuntak, J. P., & Jamaludin, J. (2024). Digital inequality in contemporary and future education. *Jurnal Bintang Pendidikan Indonesia*, 2(3), 215–228.
- Teräs, M., Suoranta, J., Teräs, H., & Curcher, M. (2020). Post-COVID-19 education and education technology “solutionism”: A seller’s market. *Postdigital Science and Education*, 2(3), 863–878. <https://doi.org/10.1007/s42438-020-00164-x>
- van Dijck, J. (2018). *The platform society: Public values in a connective world*. Oxford University Press.
- Williamson, B. (2020). *Big data in education: The digital future of learning, policy and practice*. SAGE Publications.
- Williamson, B., & Hogan, A. (2020). Commercialisation and privatisation in/of education in the context of COVID-19. *Education International Research*, 1–25.
- Wierman, B. (2025). Critical pedagogy. In the *Elgar encyclopedia of critical management studies* (pp. 1–6). Edward Elgar Publishing. <https://doi.org/10.4337/9781800377721.00034>
- Winata, M. S., & Nugraha, R. N. (2024). Digital transformation in Indonesian education to face Industry 4.0: Challenges and opportunities. *Sindoro: Cendekia Pendidikan*, 4(3), 45–58.
- Yusuf, S. M., & Kamariah, S. (2025). Digital transformation in education: A literature analysis of technological implications for educational practice. *Al-Zayn: Journal of Social Sciences and Law*, 3(2), 101–116. <https://doi.org/10.61104/alz.v3i2.1356>