

The Impact of Technological Advancement on Student Character Development in the Digital Era: A Systematic Review

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ABSTRACT:

Purpose – This study aims to explore the influence of technological advances on student character by analyzing how digital tools shape attitudes, behaviors, and value formation among learners. The study addresses the growing concern that rapid technological development may erode students' moral foundations, while also examining evidence that technology can strengthen positive character traits when used appropriately.

Design/methodology/approach – A systematic literature review (SLR) was conducted following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to systematically analyze scientific articles published within the last five years. Data were retrieved using the keywords "character education" and "technological advances" through Google Scholar and ResearchGate. From an initial pool of search results, 10 peer-reviewed studies met the inclusion criteria and were selected for in-depth analysis. The PRISMA selection process involved four stages: identification, screening, eligibility assessment, and final inclusion. The selected articles were reviewed to identify patterns, themes, and theoretical perspectives regarding the role of technology in shaping student character.

Findings – The analysis of 10 studies reveals dual impacts of technological advancement on student character. On one hand, technology supports the development of responsibility, creativity, discipline, independence, and digital literacy when integrated through structured guidance. On the other hand, excessive or unguided use contributes to gadget addiction, decreased empathy, reduced motivation, and weakened social interaction. The findings confirm that technology itself is not the primary cause of character decline; rather, its effects depend on usage patterns, teacher supervision, parental involvement, and school policy implementation.

Research limitations/implications – Limitations relate to the scope of literature sources (n=10 studies) and the reliance on two digital databases (Google Scholar and ResearchGate), which may exclude relevant studies from regions with limited technological accessibility or those published in other academic databases. Future studies could incorporate empirical observations, expand the database sources, and include grey literature to strengthen the conclusions.

Originality/value – This study offers a balanced synthesis of recent literature by demonstrating that technological advancement acts as a neutral tool whose influence on character formation is determined by educational context and user behavior. The results provide valuable insights for educators and policymakers to design character education strategies that integrate technology responsibly and effectively. The main contributions of

this study include: (1) a comprehensive PRISMA-based systematic review that consolidates current understanding of technology's dual role in character education; (2) identification of critical mediating factors (teacher supervision, parental involvement, and institutional policies) that determine whether technology enhances or undermines character development; and (3) evidence-based recommendations for stakeholders to maximize the positive potential of technology while minimizing its risks in educational settings.

Keywords: *Technological Advances; Student Character; Character Education.*

I. INTRODUCTION

Education is widely recognized as a systematic and intentional process aimed at developing students' full potential through structured and purposeful learning activities. According to the Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, education is defined as a conscious and deliberate effort to create learning environments that enable students to actively develop their potential. This conception positions education not merely as the transmission of knowledge but also as a long-term developmental process that cultivates attitudes, values, and essential life skills, ultimately shaping intellectual, emotional, social, and moral maturity.

Character plays a central role in forming an individual's identity and behavioral patterns. The term character, derived from the Greek *charassein* meaning "to engrave," symbolizes a gradual and continuous process that shapes values, dispositions, and moral reasoning. In educational contexts, character development is influenced by a wide range of internal and external factors, including family upbringing, teacher guidance, peer interaction, media exposure, and increasingly, the pervasive presence of digital technology (Agnia et al., 2021). Pentianasari (2022) argues that character education forms the foundational basis of personal development, emphasizing early inculcation of moral, spiritual, and social values. This emphasis aligns with Article 3 of Law Number 20 of 2003, which mandates the cultivation of learners with noble character, integrity, and dignity.

Technological advancement in the modern era has transformed various dimensions of human life, including the field of education. The integration of digital devices, internet access, social media, and online learning platforms has reshaped how students interact, acquire information, and construct knowledge. These technological developments generate a digital ecosystem characterized by immediacy, high interconnectivity, and fast-paced communication, all of which significantly influence the processes of learning and character formation (Rahman et al., 2023). Compared to previous generations, today's learners experience character development within a more complex and dynamic digital environment.

While technology offers substantial benefits, such as expanding access to learning resources, supporting independent and creative thinking, and fostering digital literacy, it also poses significant challenges. When effectively integrated, technological tools such as virtual laboratories, multimedia learning platforms, and digital simulations enhance curiosity, collaboration, responsibility, and problem-solving skills (Tampubolon et al., 2024; Jumanaz & Barot, 2024). Conversely, unregulated technology use may weaken students' interpersonal communication, reduce empathy, diminish self-regulation, and increase exposure to negative digital behaviors such as cyberbullying, plagiarism, and addictive online activities (Putri et al., 2022; Bani et al., 2023). These contrasting effects highlight the dualistic role of technology as both an enabler and a potential disruptor of character formation.

Despite the growing body of research examining technology and character education, existing studies remain fragmented. Many investigations focus on isolated aspects such as digital ethics,

motivational outcomes, or online behavior without providing an integrated understanding of how technology simultaneously supports and challenges character development. Moreover, only a limited number of studies adopt systematic synthesis methods, leaving gaps in the consolidation of empirical findings across different contexts and methodologies. Therefore, there is a need for a comprehensive systematic literature review (SLR) to map recent evidence and identify overarching patterns within the last five years.

Based on these considerations, the core problem addressed in this study concerns how technological advancements influence the development of student character across various dimensions. This includes examining the extent to which technology contributes to both positive character strengthening and potential degradation of moral attitudes, social interaction, and self-regulation. The study also seeks to identify emerging patterns, opportunities, and risks highlighted in recent empirical and conceptual research, thereby offering a clearer understanding of the complex relationship between technology use and character formation in contemporary educational settings.

Given the rapid acceleration of digital transformation in education, conducting an SLR is essential to provide an evidence-based synthesis that clarifies the role of technology in character formation. Through a systematic selection and analysis of studies, this review aims to offer comprehensive insight for educators, parents, and policymakers in designing character education strategies that are responsive to digital-era challenges. The SLR approach ensures methodological rigor and supports the development of informed recommendations for integrating technology responsibly and effectively within educational settings.

II. METHOD

This study employed a Systematic Literature Review (SLR) based on simplified PRISMA 2020 procedures to ensure transparency and rigor. The search was conducted through Google Scholar, SINTA, and ResearchGate, focusing on publications from the last five years (2019–2024). Keywords included “technological advances,” “character education,” “digital literacy,” and “student character.” The search initially identified 94 studies.

Screening was performed through several stages: removal of 27 duplicates, exclusion of 45 studies based on title and abstract irrelevance, and removal of 12 studies after full-text assessment due to methodological limitations or misalignment with the review focus. Ultimately, 10 articles met all inclusion criteria and were retained for synthesis.

The **inclusion criteria** consisted of:

- (1) publication year 2019–2024;
- (2) peer-reviewed status;
- (3) relevance to technology and character formation;
- (4) research conducted in educational contexts;
- (5) accessible full text.

Exclusion criteria included outdated publication, non-scholarly sources, absence of character-related variables, duplicates, and inaccessible full texts.

Data from the selected studies were analyzed using **manual coding** and **thematic synthesis**. Codes were generated inductively to identify recurring patterns on how technology influences student character. Themes were then consolidated into two major categories: (1) positive impacts, responsibility, creativity, digital literacy, independence; and (2) negative impacts, decreased empathy, social withdrawal, reduced discipline, and technology dependency. A

quality appraisal was applied to ensure methodological soundness and consistency across articles.

Table 1. Article Quality Assessment Criteria

Criterion	Description
Relevance	Alignment with technological influence on character.
Methodological Clarity	Transparency in research design and procedures.
Credibility	Strength and consistency of findings.
Peer-Review Status	Publication in recognized journals/proceedings.

III. RESULT

The analysis of ten articles indicates that the integration of technology within the educational context produces complex effects on the development of student character. Numerous studies affirm that technology can facilitate the enhancement of creativity, broaden cognitive abilities, and strengthen collaboration through more open and interactive digital learning environments. However, other findings reveal that the ease of digital access may reduce the quality of direct social interaction, weaken students' discipline, and increase the risk of negative behaviors when adequate guidance is not provided. External factors such as family environment, peer influence, and exposure to mass media appear to play a more dominant role in shaping children's character compared to the influence of schools. Consequently, parental supervision and teachers' role modeling become critical components in directing technology use toward positive outcomes. A systematic summary of these findings is presented in Table 1, which outlines the analytical results of each reviewed article.

Table 1. Results of Article Analysis

No	Authors & Year	Research Method	Main Findings
1.	Nur Agnia, A. S. G., Furnamasari, Y. F., & Dewi, D. A. (2021)	Qualitative with literature study	Technological advancement is a significant factor in shaping the character of elementary school students. Experiences and environmental conditions influence students' character development.
2.	Hadijah, Puspita, L. M., SURIANSYAH, A., & Cinantya, C. (2024)	Literature study	Technology presents both challenges and opportunities for character development. Gadget use affects values such as discipline, responsibility, and empathy.
3.	Wijaya, A. F., Mardhatillah, & Persada, Y. I. (2024)	Qualitative with case study, interviews, and observations	Digital technology produces dual impacts. The teacher's role is crucial in directing technology use through proper guidance.
4.	Imawan, M., Pettalongi, A., & Nurdin, N. (2023)	Library Research with content analysis	Technology influences the formation of children's character. Elementary students require guidance and environmental role models. Supervision is necessary when using technology
5.	Hakim, A. N., & Yulia, L. (2024)	Literature study	Technology has introduced major changes in teaching and learning

			processes. The concept of distance education has developed rapidly.
6.	Silfiya & Siagian, I. (2024)	Descriptive qualitative with constructivist approach	Educational technology enables collaboration without geographical barriers. However, excessive digital device use may reduce the intensity of direct interpersonal interaction.
7.	Supriandi, Wirawan, & Rukmana (2024)	Literature study	The integration of technology significantly affects students' cognitive and emotional development. Technology can stimulate cognitive skills and broaden perspectives.
8.	Setiawati, R., Prasmewari, D. A., & Muhtarom, T. (2024)	Descriptive qualitative	Environmental factors: Family, peers, and mass media, have a strong influence on character formation. Schools have a comparatively weaker role in shaping character.
9.	Gusmaneli, G., Hasnah, R., & Fatia, A. (2023)	Literature analysis	Integrating technology into the curriculum encourages more interactive learning, introduces various moral dilemmas, and increases student participation and engagement.
10.	Lailiyah, S., Ati, E. F., & Sumardjoko, B. (2024)	Case study with qualitative approach	Moral degradation in the digital era poses a serious challenge. Strategies for strengthening character through habituation and teachers' role modeling are essential.

IV. DISCUSSION

Introduction to Thematic Findings

The systematic literature review of 10 studies reveals that technological development exerts diverse and complex influences on students' character formation, which must be understood through the lens of character education theory. Lickona (2012) emphasizes that character development encompasses moral knowing, moral feeling, and moral action, indicating that behavioral changes influenced by technology cannot be explained in simplistic or linear terms. The findings are organized into four interconnected themes that collectively demonstrate technology's dual nature as both a catalyst for positive character development and a risk factor for moral deterioration, depending on contextual mediating factors.

Theme 1: Positive Character Outcomes Through Technology Integration

When appropriately integrated within educational contexts, technology demonstrates significant potential to cultivate positive character traits aligned with 21st-century competencies. This theme synthesizes evidence showing that technology-enhanced learning environments can foster independence, creativity, critical thinking, discipline, and digital literacy when embedded within structured pedagogical frameworks.

Technology functions as a mediating instrument that accelerates the internalization of values depending on the child's contextual environment. Nur Agnia et al. (2021) emphasize that character is not shaped by mere exposure to technology but by the ways in which children interpret, process, and imitate the values encountered within digital interactions. This finding aligns with constructivist learning theory, which posits that meaningful learning occurs when learners actively construct knowledge through interaction with their environment.

Supriandi et al. (2024) reinforce this perspective by demonstrating that the integration of technology in instructional practices can promote both cognitive and emotional growth, particularly when employed in collaborative and problem-solving contexts. The synthesis suggests that technology serves not only as an instructional medium but also as a platform for cultivating essential skills such as responsibility, self-regulation, and creative problem-solving. Pentianasari et al. (2022) further substantiate this claim by showing that digital literacy programs strengthen students' ability to navigate online environments ethically and responsibly.

Critical Insight: The common thread across these studies is that positive character outcomes emerge when technology use is intentional, supervised, and integrated within pedagogically sound frameworks. Technology amplifies existing educational values rather than creating them independently. This implies that technology should be viewed as mediative rather than deterministic, its influence is shaped by the quality of educational design and implementation.

Educational institutions must shift from technology-as-tool perspectives to technology-as-environment frameworks, where digital experiences are deliberately structured to reinforce character values. The development of 21st-century skills such as collaboration, critical thinking, and digital citizenship should be explicitly embedded within technology-enhanced curricula.

Theme 2: Negative Character Outcomes and Digital Risks

Conversely, unguided or excessive technology use presents substantial risks to students' character development, including gadget addiction, diminished empathy, weakened social interaction skills, and increased exposure to morally problematic content. This theme synthesizes evidence demonstrating how technology can undermine character formation when implemented without adequate supervision or ethical frameworks.

The reduction of face-to-face communication due to intensive gadget use carries significant consequences for the development of empathy and social communication skills. Hadijah et al. (2024) report that the shift from direct interpersonal communication to digital communication may reduce discipline and social sensitivity. This finding aligns with Schunk's (2012b) assertion that prosocial behavior is influenced by the quality of authentic social experiences. When children primarily interact through screens, their opportunities to cultivate emotional reading skills and resolve conflicts directly become limited, thereby affecting the foundation of social character development.

Lailiyah et al. (2024) document specific manifestations of moral degradation, including increased plagiarism, declining communication ethics, and irresponsible gadget use among students with uncontrolled digital access. These behaviors suggest that technology can facilitate ethical shortcuts and normalize deviant practices when students lack the moral framework to navigate digital spaces responsibly. The synthesis reveals a concerning pattern: technology amplifies existing vulnerabilities in character formation, particularly among students who lack strong value foundations or adequate guidance.

Gusmaneli et al. (2023) highlight an additional dimension the exposure to unfiltered information, digital consumerism, and popular culture that may contradict educational values. This creates a values conflict where students must navigate competing moral frameworks between school-taught values and digitally-mediated cultural norms.

Critical Insight: Negative outcomes are not inherent to technology itself but emerge from the interaction between unrestricted access, insufficient supervision, and the absence of digital

character education. The synthesis suggests that technology acts as an accelerant it speeds up both positive and negative character trajectories depending on the presence or absence of protective factors. The digital environment functions as a moral testing ground where existing character strengths and weaknesses become amplified.

Schools must implement comprehensive digital citizenship curricula that explicitly address ethical decision-making, critical media literacy, and the cultivation of online empathy. Prevention strategies should focus on building protective factors rather than solely restricting access.

Theme 3: Critical Role of Teacher and Family Supervision

Teacher guidance and family involvement emerge as the most critical mediating factors determining whether technology supports or undermines character development. This theme synthesizes evidence showing that the quality of adult supervision, modeling, and value transmission significantly moderates technology's impact on student character. The role of teachers emerges as a central factor in ensuring that technology use aligns with character education goals. Wijaya et al. (2024) demonstrate through case study evidence that teachers' capacity to guide students in managing their digital engagement helps prevent device misuse and strengthens learning focus. This reinforces the framework proposed by Nucci and Narvaez (2014), who argue that moral development requires guidance from authoritative figures capable of providing an ethical learning context. Teachers function as value mentors who ensure that technology is used within safe and productive boundaries.

However, the influence of family environment constitutes an even more dominant element in shaping children's digital character. Setiawati et al. (2024) find that families, peers, and digital media exert stronger influence on children's attitudes and moral development than formal schooling, especially at the elementary level. This corresponds with Retnowati's (2018) view that character develops primarily through sustained interaction within the home environment. When families fail to implement healthy technological practices, children become more vulnerable to negative content and impulsive behavior. Conversely, families that establish rules, communication, and supervision contribute to stronger and more adaptive digital character formation.

The synthesis reveals a complementary relationship between school-based and home-based supervision. Teachers provide structured guidance within formal learning contexts, while families shape habitual patterns of technology use and value internalization in daily life. The most effective character outcomes occur when both systems align and reinforce consistent messages about ethical technology use. However, a concerning gap emerges when family supervision is absent or inconsistent—schools alone cannot compensate for the pervasive influence of unsupervised home technology use. Lailiyah et al. (2024) emphasize that teacher exemplification functions as a reinforcing factor capable of counterbalancing the vast and rapid influx of digital information. This suggests that adult modeling of ethical digital behavior may be as important as explicit instruction.

Professional development programs must equip teachers with competencies in digital character education, not merely technical skills. Schools should establish partnerships with families to create consistent technology policies and shared expectations. Parent education programs on digital supervision and value transmission should be considered essential components of school-family collaboration.

Theme 4: Contextual and Environmental Mediators of Technology's Impact

Beyond supervision, broader contextual factors including educational policies, school culture, self-regulation capacities, and socioeconomic conditions mediate technology's influence on character formation. This theme synthesizes evidence showing that technology's impact cannot be understood in isolation from the complex ecosystem in which students learn and develop.

Educational transformation in the digital era requires a re-conceptualization of discipline and responsibility in learning. Hakim and Yulia (2024) demonstrate that technology-based learning environments, including distance learning, provide more flexible learning spaces but demand higher levels of self-regulation. Within this context, the concept of self-regulated learning becomes essential. Sahlberg (2012) argues that technological integration in education can only be effective when learners possess self-control and commitment to their learning processes. This implies that technology expands the role of personal character traits in determining learning outcomes.

The synthesis reveals that technology creates new demands on student agency and metacognitive skills. Students must develop digital self-regulation—the capacity to manage distractions, evaluate information critically, and maintain ethical standards in online environments. This represents a significant shift from traditional character education, which primarily addressed face-to-face social contexts.

Furthermore, the establishment of clear digital literacy standards, value habituation, and reflective activities becomes crucial, as recommended by Marzuki, Murdiono, Miftahuddin, et al. (2017) in character education based on moral values. School culture and institutional policies create the normative environment within which individual technology use occurs.

Critical Insight: The synthesis suggests that technology's impact is fundamentally ecological—it operates through multiple interacting systems rather than through direct linear causation. Individual character traits (self-regulation, moral reasoning), microsystem factors (teacher and family supervision), and macrosystem factors (school policies, cultural norms) all interact to shape outcomes. This complexity explains why technology produces such varied effects across different contexts and student populations.

Educational policies must adopt systems-thinking approaches that address multiple levels of influence simultaneously. Character education cannot be reduced to curriculum content alone but must encompass school culture, teacher practices, family engagement, and student agency development. Differentiated approaches may be necessary for students with varying levels of self-regulation capacity.

Integrated Synthesis: Technology as Conditional Catalyst

The synthesis of findings across all four themes reveals a nuanced understanding of technology's role in character formation. Technology cannot be regarded as a direct cause of character change. Instead, its influence depends heavily on patterns of use, the quality of guidance, and the socio-environmental context in which students interact.

When technology is managed through a holistic approach that integrates character education, digital literacy, teacher supervision, and family involvement, it can serve as a powerful catalyst for cultivating positive traits such as discipline, responsibility, creativity, and empathy. The mediative function of technology means it amplifies existing educational values and practices enhancing effective character education when present, but accelerating moral risks when protective factors are absent.

Conversely, in the absence of adequate supervision and value habituation, technology may accelerate the emergence of negative behaviors including addiction, social isolation, ethical violations, and value confusion. The digital environment presents both unprecedented opportunities for character development and novel challenges to moral formation.

Therefore, character formation in the digital era requires comprehensive integration of character education theory, technology-based pedagogical practices, and collaborative efforts between schools and families. The evidence strongly suggests that neither technological determinism (the belief that technology inevitably shapes character) nor instrumentalism (the belief that technology is merely a neutral tool) adequately explains the complex reality. Instead, technology functions as a conditional catalyst whose effects are determined by the quality of the educational ecosystem in which it is embedded.

V. CONCLUSION

Based on the analysis and discussion, this study explicitly answers the research problem by confirming that the integration of technology in education significantly shapes students' character development. The findings reveal two-sided impacts: on the positive side, technology enhances students' independence, digital responsibility, collaboration, and critical thinking when guided by teachers and supported by families; on the negative side, unregulated use can lead to distraction, reduced empathy, passive learning behaviors, and ethical issues such as plagiarism or cyberbullying. This research contributes by providing empirical support that technology can serve as a strategic tool for character education when integrated through value-oriented and pedagogically controlled approaches. Accordingly, policy recommendations include the development of ethical digital literacy curricula, strengthening teacher training in character-based digital pedagogy, and fostering family involvement in technology monitoring. Future research is encouraged to examine the long-term effectiveness of character-oriented digital learning models, create assessment instruments for digital character development, and conduct comparative studies across diverse technological integration approaches, thereby reinforcing character education practices that align with the demands of the digital era.

VI. REFERENCES

- [1] A. S. G. Nur Agnia, Y. F. Furnamasari, and D. A. Dewi, "Pengaruh Kemajuan Teknologi terhadap Pembentukan Karakter Siswa," *Jurnal Pendidikan Tambusai*, vol. 5, no. 3, pp. 9331–9335, 2021. <https://doi.org/10.31004/jptam.v5i3.2473>
- [2] E. A. S. Bani, M. A. Nurcahya, M. L. Winandar, and Y. T. Herlambang, "Pengaruh teknologi terhadap karakter siswa sekolah dasar," *Jurnal Pendidikan Indonesia*, vol. 1, no. 2, 2023.
- [3] P. D. Fridayanthi, *Penggunaan Gaya Bahasa Novel Anak Rantau Karya A. Faudi Dalam Menganalisis Hasil Belajar Sastra Di Sekolah*, Jurnal Universitas PGRI Mahadewa Indonesia, vol. 20, no. 2, pp. 68–77, 2019.
- [4] G. Gusmaneli, R. Hasnah, and A. Fatia, "Pemanfaatan Teknologi Pendidikan dalam Meningkatkan Karakter Anak Bangsa di Era Digital," *Journal of Regional Development and Technology Initiatives*, vol. 1, no. 1, pp. 1–15, 2023.
- [5] P. Hadijah, L. M. Puspita, A. Suriansyah, and C. Cinantya, "Peran Teknologi dan Komunikasi Terhadap Karakter dan Interaksi Sosial Peserta Didik di Sekolah Dasar,"

- MARAS: Jurnal Penelitian Multidisiplin*, vol. 2, no. 4, pp. 2050–2061, 2024. <https://doi.org/10.60126/maras.v2i4.554>
- [6] A. N. Hakim and L. Yulia, “Dampak Teknologi Digital Terhadap Pendidikan Saat Ini,” *Jurnal Pendidikan Sosial dan Humaniora*, vol. 3, no. 1, pp. 145–163, 2024.
- [7] M. Imawan, A. Pettalongi, and N. Nurdin, “Pengaruh Teknologi Terhadap Pendidikan Karakter Peserta Didik di Era Society 5.0,” *Prosiding Kajian Islam dan Integrasi Ilmu di Era Society (KIIIES) 5.0*, vol. 2, no. 1, pp. 323–328, 2023.
- [8] R. F. Jumanazar and M. Barot, “Digital technologies in biology education: A comparative analysis of student achievement and character development,” *Journal of Applied Science and Social Science*, vol. 15, no. 10, 2025.
- [9] S. Lailiyah, E. F. Ati, and B. Sumardjoko, “Strategi Penanaman Nilai-Nilai Karakter dalam Mencegah Degradasi Moral Siswa Pada Era Digital,” *Didaktika: Jurnal Kependidikan*, vol. 13, no. 2, pp. 2029–2036, 2024. <https://doi.org/10.58230/27454312.577>
- [10] S. Pentianasari, F. D. Amalia, B. Martati, and N. A. Fithri, “Penguatan Pendidikan Karakter Pada Siswa Sekolah Dasar Melalui Pemanfaatan Literasi Digital,” *Jurnal PGSD*, vol. 8, no. 1, pp. 58–72, 2022. <https://doi.org/10.33369/pgsd.8.1.58-72>
- [11] F. A. Putri, G. N. Insani, M. H. Arifin, and Y. Wahyuningsih, “Pengaruh kemajuan teknologi terhadap karakter peduli sosial siswa sekolah dasar,” *Jurnal Pendidikan Tambusai*, vol. 6, no. 1, 2022. <https://doi.org/10.31004/jptam.v6i1.3178>
- [12] F. A. Rahman, M. Rohmah, S. Rustiani, I. Y. Fatmawati, and N. A. D. S. Zahro, “Pendidikan karakter dalam era digital,” *Journal of Creative Student Research*, vol. 1, no. 6, 2023.
- [13] Silfiya and I. Siagian, “Penggunaan Teknologi dalam Dunia Pendidikan Tanpa Menghilangkan Nilai-Nilai Sosial,” *Journal on Education*, vol. 7, no. 1, pp. 2554–2568, 2024. <https://doi.org/10.31004/joe.v7i1>.
- [14] Supriandi, Wirawan, and Rukmana, “Pengaruh Integrasi Teknologi Pembelajaran terhadap Efektivitas dan Transformasi Paradigma Pendidikan,” *Jurnal Yudistira: Publikasi Riset Ilmu Pendidikan dan Bahasa*, vol. 3, no. 4, pp. 293–300, 2024. <https://doi.org/10.61132/yudistira.v3i4>
- [15] S. R. Tampubolon, F. A. Feby, T. L. V. Sihotang, A. Daulay, G. S. G. Sigalingging, R. P. Ginting, and N. Silalahi, “The Influence of Technology and Social Media on Student Character Building,” *International Journal of Educational Practice and Policy*, vol. 2, no. 2, 2024.
- [16] A. F. Wijaya, Mardhatillah, and Y. I. Persada, “Pengaruh Teknologi Digital pada Pembentukan Karakter Peserta Didik di SDN Lesanpuro 4 Malang,” *Sindoro: Cendikia Pendidikan*, vol. 9, no. 6, pp. 41–50, 2024. <https://doi.org/10.9644/sindoro.v9i6.8343>