HAMKA INSIGHT
2026, Vol. 4, No. 4, pp 1 -20
https://doi.org/10.51574/hamka.v6i1.198

OPEN ACCESS Check for updates

VOCATIONAL EDUCATION | RESEARCH ARTICLE

Enhancing digital transformation capacity of educators to optimize school governance

Tirta Anhari*[1], Ahmad Said[2]
[1]Program Studi Teknik Informatika, Fakultas Teknologi Industri dan Informatika, Universitas Muhammadiyah Prof DR HAMKA, Jakarta, 13830, Indonesia
[2]Program Studi Perbankan Syariah, Fakultas Agama Islam, Universitas Muhammadiyah Prof DR HAMKA, Jakarta, 13830, Indonesia
*Correspondence: ✉ tirta.anhari@uhamka.ac.id

Abstract

Purpose: This study evaluates the effectiveness of implementing an information technology paradigm at SMK Muhammadiyah Al Kautsar Jakarta to resolve critical operational bottlenecks. Specifically, it addresses systemic infrastructure inequality, low digital literacy among educators, organizational resistance, and weak digital service governance that hinder academic management.

Method: Adopting a qualitative case study design, data were collected from key school stakeholders through in-depth interviews, direct operational observations, and document analysis of curriculum and digital policy records. The gathered empirical data were analyzed using an interactive model comprising data reduction, data presentation, and conclusion drawing.

Findings: Targeted training significantly enhanced stakeholders' comprehension, shifting their perception of technology from a costly administrative burden to a core strategic asset. By holistically addressing sociological and governance root causes alongside technical skills, the intervention strengthened data security awareness, educational service quality, and data-driven decision-making. However, achieving complete organizational transformation requires long-term funding and continuous monitoring.

Practical implications: Provides vocational education practitioners and administrators with actionable strategies to integrate technical upskilling with adaptive governance frameworks, thereby optimizing operational efficiency.

Originality/value: Offers a novel comprehensive framework that integrates sociological and governance dimensions to overcome technology adoption barriers in Indonesian vocational high schools.

Article History

Received 10 January 2026
Revised 3 June 2026
Accepted 24 June 2026

Keyword

Digital Transformation, Digital Literacy, Information Technology Paradigm, Educational Governance, Vocational School.

This work is licensed under a Creative Commons Attribution (CC BY-SA) 4.0 license Internasional License.

How to cite:

Anhari, T., Said, A. (2026). Enhancing digital transformation capacity of educators to optimize school governance. *Hamka Insight.* 6(1). 1-20. https://doi.org/10.51574/hamka.v6i1.198

https://doi.org/10.51574/hamka.v6i1.198

INTRODUCTION

The Digital Era 4.0 requires educational institutions to adapt by integrating technology into every aspect of their operations in order to improve productivity and the quality of education services (Hamdala et al., 2025). However, conditions on the ground show that technology adoption in schools is often hampered by the digital literacy gap and weak human resource competency in managing information-system-based academic services (Hariyadi, 2023; Hasrianti & Hidayati, 2023, p. 1495; Saleh et al., 2026). This condition results in inefficiency in academic data reporting processes that remain manual and unintegrated, thereby hindering strategic decision-making at the school (Hexagraha et al., 2026).

In addition, a low understanding of the importance of standardized digital service governance often triggers resistance among educators when faced with the shift toward platform-based systems (Sofiana et al., 2025), (Raudatul & Junaris, 2025), where limited infrastructure and budget support are often the main obstacles in optimizing this technology integration (SYAHID & PEMBANGUNAN, 2024). In response to these challenges, this study aims to map out strategic steps for comprehensively integrating the information technology paradigm, digital literacy, and digital service governance at SMK Muhammadiyah Al Kautsar Jakarta (Septio & Madhakomala, 2025). This study is expected to provide a practical contribution to formulating an effective digital transformation model, in order to improve managerial efficiency and adaptive learning quality for the entire school ecosystem (Susmanto et al., 2026), (Rastiana et al., 2025), particularly in preparing graduates who are competitive in facing workforce challenges that continue to be disrupted by technological advances (Picauly, 2024), (Subroto et al., 2023, p. 475).

By implementing this framework, schools can minimize the infrastructure and human resource constraints that have so far limited operational effectiveness (Nurhayati & Mulyanti, 2025), (Azzahra, 2024), so that the success of this transformation

https://doi.org/10.51574/hamka.v6i1.198

depends not only on technical tools but also on the strategic orchestration of all educational resources to achieve the expected quality standards (Abdul, 2025). This effort specifically targets improved administrative management performance and learning effectiveness that is relevant to current industry dynamics (Setyowati et al., 2025; Taufiqurrahman & Wasiran, 2025). Through the strengthening of these pillars, schools can ensure data transparency and sustainable governance accountability, while also reducing policy fragmentation that often hinders the synchronization of digital services within the educational environment (Mandalia, 2024). This synergy is expected to create an educational ecosystem that is more adaptive to change and to minimize the risk of digital gaps among educators and education personnel (Khairunisa et al., 2026).

This strategy critically emphasizes human resource capacity development to address administrative resistance and the lack of leadership commitment that are often the main obstacles in implementing education management systems (Triwiyanto et al., 2024, p. 125), (Febrianti et al., 2023, p. 517), in line with efforts to create technology-based education management capable of improving administrative efficiency and the involvement of all stakeholders (Suwardhani et al., 2025). Therefore, strengthening this IT paradigm serves as the foundation for creating governance that is transparent, accurate, and responsive to the demands of educational administration modernization (Nurfa, 2024; Rahayu, 2025). The implementation of an integrated information system enables the automation of routine tasks and the provision of real-time data, which directly contributes to improving service quality for both students and staff (Nirmala, 2025; Purwani et al., 2024).

Furthermore, the IT paradigm framework serves as a strategic foundation for aligning technology infrastructure with the needs of modern and efficient school management (Jennah et al., 2025; Masinambow et al., 2025). This paradigm emphasizes that investment in hardware must be accompanied by sustainable human resource development so that technology functions as a catalyst for data-based decision-

https://doi.org/10.51574/hamka.v6i1.198

making (Iskandar et al., 2025; Rahmawati et al., 2026). In addition, digital literacy encompasses mastery of the cognitive and technical aspects that enable teachers and students to use digital tools critically in the learning process (Nasution et al., 2024; Rahman, 2024). This literacy dimension also involves the willingness to adapt to new tools, which is crucial in overcoming resistance to systematic change within educational institutions (Yusrianti & Susanti, 2025), (Mariatul, 2026).

Digital service governance then functions as a framework for coordinating policy, infrastructure, and resources, to ensure that every technological innovation can operate transparently and accountably (Hasanah & Aimah, 2025; Prima et al., 2026). The application of this governance model supports the integration of a unified management information system, which has proven significant in improving academic administrative efficiency and strengthening data accountability in educational institutions (Widiastuti et al., 2025). The adoption of an integrated student management system, for example, is concrete evidence of how digital governance can accelerate administrative services while ensuring the accuracy of school data reporting (Syahri et al., 2025). More broadly, technology integration in school management enables more accurate data-based decision-making, which becomes a crucial foundation for the sustainability of educational operations (Putra et al., 2025).

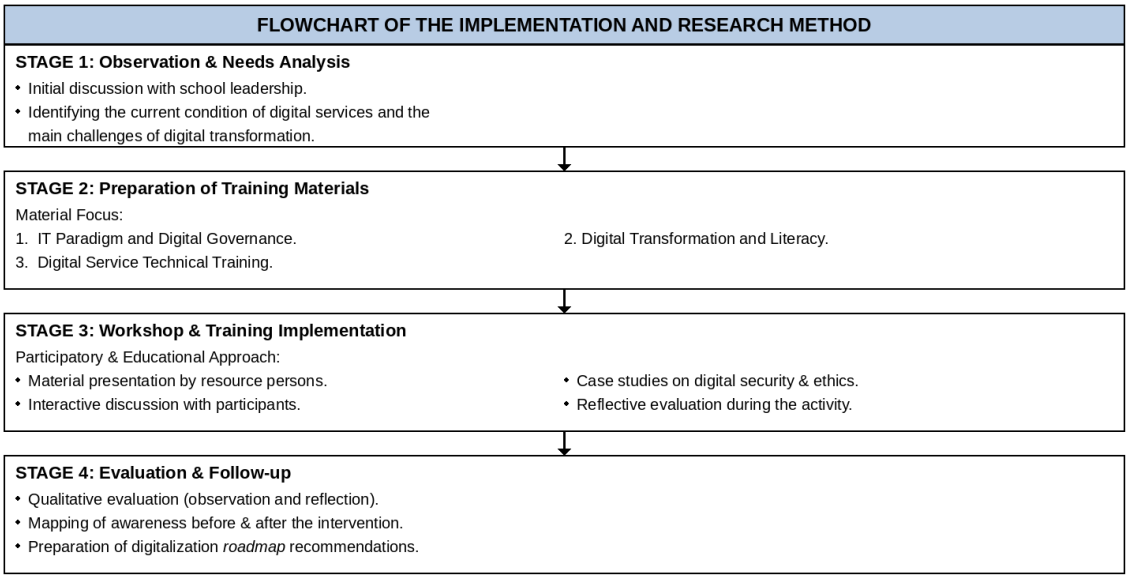
The effectiveness of this transformation depends on synergistic collaboration among all stakeholders to provide sustainable infrastructure and funding support (Kusumaningrum et al., 2026). In addition, ongoing training for educators has proven crucial in minimizing technical competency disparities, so that technology is not merely an administrative formality but a substantial instrument for optimizing facilities and infrastructure (Khairunnisa et al., 2025; Sangaji & Irianto, 2025, p. 66). School leadership's commitment to routinely allocating budgets for hardware and software maintenance is an absolute prerequisite for ensuring the sustainability of the system (Ma'sum et al., 2024, p. 557).

https://doi.org/10.51574/hamka.v6i1.198

METHODS

This study applies a qualitative approach using a case study method to explore the digital transformation process in depth at SMK Muhammadiyah Al Kautsar Jakarta as the main subject and object of the research (Lumi et al., 2026). The data collection techniques used include in-depth interviews with school stakeholders, direct observation of operational activities, and analysis of curriculum documentation and digital policies (Muslimin & Khalasinikov, 2025; Putri et al., 2025). Furthermore, the data analysis method was carried out through an interactive model that includes data reduction, data presentation, and conclusion drawing to ensure the validity of the research results (Apriwulan et al., 2025).

Tabel 1. Researh Methodology



Participant Demographics The participants in this activity were stakeholders and members of the academic community at SMK Muhammadiyah Al Kautsar Jakarta. Participants consisted of school leaders (the principal and vice principal), teachers, education personnel, and school administrative staff. The involvement of all these elements is important to ensure that digital transformation and IT governance are understood holistically by the entire organizational structure driving the school.

https://doi.org/10.51574/hamka.v6i1.198

Data Collection Technique Data collection in this activity began with observation and needs analysis through initial discussions with school leadership to identify the main challenges. Next, data on participants' understanding was evaluated through participatory observation, interactive discussion, case studies, and reflective evaluation carried out during and after the workshop and training. This interactive approach proved effective in mapping participants' awareness, literacy, and work culture before and after the training intervention was given.

Data Analysis Technique Data analysis was carried out using a qualitative descriptive method. Data collected from participant reflections and field observations were evaluated based on five main indicators: understanding of the IT paradigm, understanding of digital governance policy, level of digital literacy, understanding of digital services, and awareness of data security and reputation risks. The analysis stages included mapping the conditions before (before) and after (after) the training, in order to see the extent of the shift in participants' understanding (paradigm) regarding digital transformation achieved

RESULT AND DISCUSSION

1. Description of Key Findings This activity successfully demonstrated a measurable improvement in participants' understanding. Before the training, most participants viewed technology merely as an administrative tool and operational cost. After the training, participants were able to understand the close relationship between technology, service quality, school reputation, data security protection, and the importance of data-based decision-making. An evaluation of participants' understanding is presented in Table 2.

Tabel 2. Training Evaluation Focus

No	Evaluation Aspect	Achievement Indicator
1	**IT Paradigm**	Understanding of IT as a strategic organizational asset.

https://doi.org/10.51574/hamka.v6i1.198

2	**Digital Governance**	Understanding of the importance of policy-making and data security protection.
3	**Digital Literacy**	Ability to use technology critically and responsibly.
4	**Digital Services**	Understanding of the integration of the school's operational service systems.
5	**Risk Awareness**	Understanding of mitigating data risks and safeguarding institutional reputation.

2. Analysis and Explanation of the Mechanism This paradigm shift occurred because of an educational approach that addresses the root sociological and governance issues, rather than focusing solely on technical application training. Strengthening the paradigm that "IT is a strategic asset" encouraged school leadership to take a direct role in IT planning. Through the digital governance material, participants were guided to simulate role division and map the risks of student data leaks and social media misuse, giving rise to awareness of the importance of digital security policies (SOPs).

3. Comparison with Previous Research (State of the Art) These findings are in line with the view of UNESCO (2021), which states that digital literacy is an absolute competency that must be mastered by educators and institutional managers in the era of transformation. The results of this activity also confirm previous studies by De Haes & Van Grembergen (2015) that information technology governance (IT governance) is essential so that the use of technology controls risk and provides added value. A school cannot transform maturely if pedagogical competence and managerial governance do not run in alignment with its digital infrastructure integration.

4. Strengths and Weaknesses of the Study The main strength of this program's implementation lies in its sociocultural approach (paradigm and governance), which is often overlooked when institutions focus solely on procuring digital infrastructure. However, the drawback is that this training and mentoring program was carried out

https://doi.org/10.51574/hamka.v6i1.198

over a limited period of time. An organizational culture change (cultural shift) toward a fully digital culture requires time, funding commitment, and regular monitoring and evaluation.

5. Implications, Impact, and Contribution of the Research Findings In practical terms, this activity has fostered an initial commitment from SMK Muhammadiyah Al Kautsar Jakarta. As a follow-up, the school is committed to planning the development of a basic school IT policy, improving digital services, independently strengthening educators' literacy, and developing a roadmap for the school's ongoing digital transformation. Theoretically, these findings enrich the literature by showing that governance (governance) in the secondary education sector absolutely requires a digital leadership paradigm (digital leadership) that is competent.

CONCLUSION

The main conclusion of this activity is that the digital transformation training program, which focuses on strengthening the IT paradigm, digital governance, digital literacy, and school service systems, has had a positive impact in improving the understanding and readiness of SMK Muhammadiyah Al Kautsar Jakarta to face the digital era. This impact was achieved through a participatory education mechanism that made the academic community aware that technology is not merely an administrative tool, but a strategic asset and a (data-based) decision-making instrument that requires mature security governance and digital ethics. The strategic implications of these findings show that the success of school digitalization depends heavily on transformational leadership and consistent policy support.

Given the limitations of this short-duration activity, the future steps (future steps) that the school must pursue are to immediately initiate the development of a roadmap for the school's measurable and sustainable digital transformation. A broader vision of this transformation requires educational institutions not only to continue digitizing services

partially, but also to build an institutional ecosystem with strong resilience (resilience) and a strong culture of digital collaboration. Therefore, it is recommended that the school establish a basic policy (blueprint) on IT governance and data security, hold regular digital literacy training for teachers and education staff, and optimize the use of data for school quality evaluation. Furthermore, future research is recommended to explore the effectiveness of digital leadership in comprehensively integrating technology infrastructure to improve student learning outcomes. In addition, future studies need to examine the balance between the adoption of artificial intelligence and the strengthening of humanistic values to ensure that the education ecosystem remains adaptive amid the dynamics of Super Smart Society 5.0.

Author Contribution

TA: Conceptualization, Methodology, Investigation, Writing – Original Draft, Visualization. AS: Formal Analysis, Writing – Review & Editing, Validation, Supervision.

Funding Statement

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. The study was conducted entirely using internal resources and operational support from the authors' affiliated institutions.

Conflict of Interest Statement

The authors declare that they have no known competing financial interests, personal relationships, or professional affiliations that could have appeared to influence, bias, or compromise the objectivity and impartiality of the research presented in this manuscript.

Declaration of Generative AI and AI-Assisted Technologies

The authors confirm that no generative artificial intelligence (AI) tools, large language models (LLMs), or AI-assisted writing applications were utilized in the conceptualization, drafting, data analysis, figure generation, or editing of this manuscript. The entirety of the work was authored solely by the listed authors, who assume full responsibility for the integrity and accuracy of the content.

Additional Information

Not applicable. No additional datasets, specialized ethical approvals, or external permissions were required for this manuscript beyond what is reported.

REFERENCES

Abdul, H. E. (2025). *Manajemen strategik pembelajaran digital: Peningkatan mutu di Sekolah Menengah Kejuruan*. Neliti. https://repository.globalterasfana.com/publications/639102/manajemen-strategik-pembelajaran-digital-peningkatan-mutu-di-sekolah-menengah-ke

Apriwulan, H. F., Siswanto, D. H., Susetyawati, M. M. E., & Hidayati, E. (2025). Systematic management of digital education services in Islamic senior high schools. *Jurnal Ilmiah Multidisiplin Ilmu*, *2*(5), 216–226. https://doi.org/10.69714/y1jnvs13

Arrasyid, I. A., Herniyanti, N. F., Kinasih, A. D., & Ajahari, A. (2025). Penerapan teknologi informasi pada lembaga pendidikan Islam di era digitalisasi. *An-Nahdlah: Jurnal Pendidikan Islam*, *5*(1), 76–86. https://doi.org/10.51806/an-nahdlah.v5i1.722

Azzahra, A. (2024). Transformasi digital dalam pengelolaan data siswa: Studi kasus SMK Kabupaten Kampar. *Al-Marsus: Jurnal Manajemen Pendidikan Islam*, *2*(2), 142–153. https://doi.org/10.30983/al-marsus.v2i2.9098

De Haes, S., & Van Grembergen, W. (2015). *Enterprise governance of information technology: Achieving alignment and value, featuring COBIT 5*. Springer.

Febrianti, I., Tuffahati, J., Rifai, A., Affandi, R. H., Pradita, S., Akmalia, R., & Siahaan, A. (2023). Pengaruh penggunaan teknologi informasi dalam manajemen perencanaan pendidikan untuk meningkatkan efisiensi pendidikan. *Academy of Education Journal*, *14*(2), 506–522. https://doi.org/10.47200/aoej.v14i2.1763

Hamdala, M. R., Wijonarko, P., Mufit, C., & Sobirin, M. (2025). Sosialisasi strategi IT/IS untuk optimalisasi transformasi digital. *Kami Mengabdi*, *4*(2), 18–22. https://doi.org/10.52447/km.v4i2.7929

Hariyadi, H. (2023). Transformasi digital madrasah untuk peningkatan mutu layanan pendidikan di MTs Al Kautsar Kota Depok. *Jurnal Minfo Polgan*, *12*(1), 42–49. https://doi.org/10.33395/jmp.v12i1.12314

Hasanah, U., & Aimah, S. (2025). Implementasi sistem informasi manajemen terintegrasi di SMP Plus Darussalam. *Jurnal An-Nadliyah*, *4*(1), 101–119. https://doi.org/10.70502/ajsk.v4i1.203

Hasrianti, H., & Hidayati, D. (2023). Upaya pengembangan guru SMA swasta Kota Kendari dalam menghadapi tantangan transformasi digital. *Edukatif: Jurnal Ilmu Pendidikan*, *5*(2), 1494–1507. https://doi.org/10.31004/edukatif.v5i2.5218

Hexagraha, A., Lidya, L., & Ferdiansyah, D. (2026). Transformasi digital manajemen mutu: Peningkatan kompetensi guru dalam tata kelola mutu berbasis aplikasi web di SMK Ma'arif Terpadu Cicalengka, Jawa Barat. *Jurnal Abdi Masyarakat Indonesia*, *6*(1), 187–198. https://doi.org/10.54082/jamsi.2401

Iskandar, N., Nugraha, M. S., & Giu, I. Y. (2025). Integrasi teknologi informasi dalam manajemen strategis di sekolah dasar. *Kharismatik*, *3*(2), 125–137. https://doi.org/10.70757/kharismatik.v3i2.105

Jennah, S. N., Chotib, M., & Sukamto, S. (2025). Transformasi digital administrasi sekolah: Strategi inovatif dalam meningkatkan *excellent service*. *Tadbir: Jurnal Manajemen Pendidikan Islam*, *13*(2), 244–265. https://doi.org/10.30603/tjmpi.v13i2.6250

Khairunisa, A., Sari, D. N., Indrawan, T. J., & Afriza, A. (2026). Kajian literatur: Manajemen sumber daya manusia pendidikan pada era digital. *Jurnal Pendidikan Tambusai*, *10*(1), 406–414. https://doi.org/10.31004/jptam.v10i1.35882

Khairunnisa, K., Zuhairiah, A. R., Yuliansyah, Y., Aslamiah, A., & Amelia, R. (2025). Digitalisasi manajemen sekolah: Pemanfaatan teknologi dalam pelatihan guru untuk optimalisasi sarana dan prasarana di SDN Sungai Kitano 1. *Empiricism Journal*, *6*(4), 2323–2331. https://doi.org/10.36312/1h31sd75

Kurniawan, D., Purnama, Y., Siminto, S., Riady, Y., & Zaakiyyah, H. K. A. (2024). Technology integration in educational management: Its impact on community participation. *Jurnal Terobosan Peduli Masyarakat (TIRAKAT)*, *1*(1), 10–20. https://doi.org/10.61100/j.tirakat.v1i1.101

Kusumaningrum, D. A., Mysita, S. K., Rojikin, M., Susanti, E. I., Naziah, F. T. I., Kartikasari, D. A., Novita, E. D., & Ulfa, F. D. M. (2026). Penguatan profesionalisme guru dan tata kelola sekolah melalui kegiatan pelatihan sebagai fondasi transformasi pembelajaran era digital di SDN 1 Dilem. *At-Tamkin*, *8*(2), 81–86. https://doi.org/10.33379/at-tamkin.v8i2.8321

Lumi, D. R. N., Kapojos, S. M., & Bojoh, C. S. A. (2026). Eksplorasi literasi digital sebagai pilar dasar pendidikan berkelanjutan melalui telaah kesiapan siswa SMTK Kristo, Manado. *Regula Fidei: Jurnal Pendidikan Agama Kristen*, *11*(1), 56–74. https://doi.org/10.33541/rfidei.v11i1.363

Mahdalena, F. C., Asnawi, Y. H., & Hermadi, I. (2025). Strategi transformasi digital untuk peningkatan manajemen mutu pendidikan sekolah menengah: Studi kasus PT Kunci Transformasi Digital. *Inovasi Pembangunan: Jurnal Kelitbangan*, *13*(2). https://doi.org/10.35450/jip.v13i02.1057

Mandalia, S. A. (2024). Inovasi teknologi informasi untuk efisiensi manajemen pendidikan dan akuntabilitas di Madrasah Ibtidaiyah. *Shibyan: Jurnal Pendidikan Guru Madrasah Ibtidaiyah*, *2*(2), 123–142. https://doi.org/10.30999/shibyan.v2i1.3812

Mariatul, M. (2026). Manajemen sumber daya manusia pendidik dalam menghadapi tantangan digitalisasi pendidikan: Studi literature. *Jurnal Pendidikan Tambusai*, *10*(1), 3805–3812. https://doi.org/10.31004/jptam.v10i1.36672

Masinambow, C. J. R., Lengkong, J. S. J., & Rotty, V. N. J. (2025). Inovasi digital dalam manajemen sekolah: Meningkatkan kinerja pendidikan di era teknologi. *Academy of Education Journal*, *16*(1), 8–17. https://doi.org/10.47200/aoej.v16i1.2686

Ma'sum, M., Alim, A., & Andriana, N. (2024). Analysis of effective administrative management with the application of information technology at SDN Pasar Minggu 01. *Manazhim*, *6*(2), 549–559. https://doi.org/10.36088/manazhim.v6i2.5265

Muliati, E., & Al-Fatih, M. (2025). Implementasi teknologi informasi dalam pengelolaan tata usaha di MTsN 4 Denanyar Jombang. *Jurnal IHSAN: Jurnal Pendidikan Islam*, *3*(3), 667–675. https://doi.org/10.61104/ihsan.v3i3.1392

Muslimin, M., & Khalasinikov, S. R. (2025). Manajemen inovasi kurikulum di era digital: Studi kasus pada SDUT Al-Chusna Loram Wetan. *Afeksi: Jurnal Penelitian dan Evaluasi Pendidikan*, *6*(6), 1638–1643. https://doi.org/10.59698/afeksi.v6i6.691

Nasution, A., Rambe, A., Oktapianingsi, R., & Jannah, A. (2024). Peran pendekatan sistem dalam transformasi digital di dunia pendidikan. *Algebra: Jurnal Pendidikan Sosial dan Sains*, *4*(4), 168–173. https://doi.org/10.58432/algebra.v4i4.1194

Nirmala, T. N. D. (2025). Smart HR for smart school: Mengintegrasikan teknologi digital untuk administrasi pendidikan efisien dan efektif. *Journal of Innovative and Creativity (Joecy)*, *5*(2), 8932–8947. https://doi.org/10.31004/joecy.v5i2.1402

Nugraha, M. R., Khuluqo, I. E., & Istaryatiningtias, I. (2025). Evaluasi implementasi literasi digital pada Platform Merdeka Mengajar (PMM) dalam meningkatkan budaya organisasi pembelajaran guru SMK Negeri di Jakarta. *Jurnal Studi Guru dan Pembelajaran*, *8*(3), 2101–2111. https://doi.org/10.30605/jsgp.8.3.2025.7204

Nurfa, M. (2024). Digitalisasi administrasi sekolah untuk efisiensi manajemen pendidikan. *JKP: Jurnal Khasanah Pendidikan*, *3*(1), 8–11. https://doi.org/10.58738/jkp.v3i1.983

Nurhayati, N., & Mulyanti, D. (2025). Strategi manajemen pendidikan di era digital: Optimalisasi infrastruktur, SDM, dan pembelajaran berbasis teknologi. *Jurnal Pelita Nusantara*, *2*(4), 376–383. https://doi.org/10.59996/jurnalpelitanusantara.v2i4.698

OECD. (2020). *Back to the future of education: Four OECD scenarios for schooling*. OECD Publishing. https://doi.org/10.1787/17826322-en

Picauly, V. E. (2024). Transformasi pendidikan di era digital. *Indonesian Research Journal on Education*, *4*(3). https://doi.org/10.31004/irje.v4i3.1278

Prima, A., Natavia, D. S., Azainil, A., Buhari, M. R., & Hidayanto, D. N. (2026). Transformasi kepemimpinan digital dalam pengelolaan lembaga pendidikan. *JIIP - Jurnal Ilmiah Ilmu Pendidikan*, *9*(1), 82–92. https://doi.org/10.54371/jiip.v9i1.10160

Purwani, R., Fathoni, A., Sarilan, S., & Siswanto, H. (2024). Transformasi administrasi pendidikan untuk mengoptimalkan efisiensi dan kualitas layanan pendidikan pada era digital. *Jurnal Keilmuan dan Keislaman*, *4*(1), 53–58. https://doi.org/10.23917/jkk.v4i1.261

Putra, V. P., Ramadani, A. I. W. S., Arisafitri, S. N., & Suratman, S. (2025). Peran teknologi dalam menunjang efektivitas pengelolaan keuangan instansi pendidikan. *Ihtirom*, *4*(2), 706–714. https://doi.org/10.70412/itr.v4i2.191

Putri, N., Makki, M., Mustari, M., Saputra, H. H., & Fahruddin. (2025). Manajemen sekolah berbasis digital di SMA Negeri 1 Mataram. *JPAP (Jurnal Praktisi Administrasi Pendidikan)*, *9*(2), 109–112. https://doi.org/10.29303/jpap.v9i2.1096

Rahayu, R. (2025). Integrasi teknologi digital dalam administrasi pendidikan: Studi kasus penerapan sistem e-administrasi di Sekolah Menengah Kejuruan. *Jurnal Ilmiah Jendela Pendidikan*, *14*(1), 34–39. https://doi.org/10.55129/jp.v14i1.3168

Rahman, F. (2024). Strategi manajemen pendidikan untuk meningkatkan kualitas pendidikan di era digital. *Portal Riset dan Inovasi Sistem Perangkat Lunak*, *2*(3), 129–134. https://doi.org/10.59696/prinsip.v2i3.150

Rahmawati, D., Nurcahya, I., & Aliyah, R. R. (2026). Sistem Informasi Manajemen (SIM) dalam pengelolaan pendidikan di lingkungan sekolah dasar. *Indo-MathEdu Intellectuals Journal*, *7*(1), 1547–1555. https://doi.org/10.54373/imeij.v7i1.5082

Rastiana, Salam, M. A., Imani, N. P., Harto, K., & Oviyanti, F. (2025). Integrasi teknologi informasi dalam perencanaan pendidikan Islam: Tantangan dan peluang di era digital. *Irfani*, *21*(1), 129–141. https://doi.org/10.30603/ir.v21i1.6292

Raudatul, S., & Junaris, I. (2025). Digitalisasi pelayanan akademik madrasah melalui pemanfaatan Rapor Digital Madrasah (RDM) di MTsS Miftahul Huda Bandung. *Bhakti Nagori: Jurnal Pengabdian Kepada Masyarakat*, *5*(2), 1202–1208. https://doi.org/10.36378/bhakti_nagori.v5i2.4991

Rosmini, H., Ningsih, N., Murni, M., & Adiyono, A. (2024). Transformasi kepemimpinan kepala sekolah pada era digital: Strategi administrasi pendidikan berbasis teknologi di sekolah menengah pertama. *Konstruktivisme: Jurnal Pendidikan dan Pembelajaran*, *16*(1), 165–180. https://doi.org/10.35457/konstruk.v16i1.3451

Saleh, N., Sain, M., & Bahri, S. (2026). Transformasi digital literacy pegawai satuan pendidikan untuk mendukung pengelolaan layanan akademik modern. *Budimas: Jurnal Pengabdian Masyarakat*, *8*(1). https://doi.org/10.29040/budimas.v8i1.18939

Sangaji, M. S. J., & Irianto, J. (2025). Transformasi inovasi pelayanan publik menuju pemerintahan digital. *Jejaring Administrasi Publik*, *17*(1), 54–70. https://doi.org/10.20473/jap.v17i1.72708

Septio, G., & Madhakomala. (2025). Integrasi transformasi digital dalam kurikulum dan pembelajaran sekolah di Indonesia: Sebuah tinjauan sistematis. *Jurnal*

Manajemen Pendidikan dan Ilmu Sosial, *7*(1), 218–231. https://doi.org/10.38035/jmpis.v7i1.6731

Setyowati, R. D., Rohman, M. M., Mustofa, N. A., & Badrudin, B. (2025). Manajemen strategis untuk meningkatkan efektivitas pengelolaan sumber daya pendidikan Islam di era digital. *POACE: Jurnal Program Studi Administrasi Pendidikan*, *5*(1), 16–22. https://doi.org/10.24127/poace.v5i1.7778

Silalahi, V. A. J. M., Sundari, S., S. Hadiningrat, K. P. S., & Pakpahan, M. (2025). Implementasi kepemimpinan digital kepala sekolah dan guru dalam mempersiapkan peserta didik Sekolah Menengah Atas menjadi Generasi Emas 2045. *JIIP - Jurnal Ilmiah Ilmu Pendidikan*, *8*(7), 7738–7744. https://doi.org/10.54371/jiip.v8i7.8745

Sofiana, N., Mahendra, D., & Mubarok, H. (2025). Inovasi manajemen administrasi dan pembelajaran di era digital dengan e-smartschool. *Jurnal Inovasi Hasil Pengabdian Masyarakat (JIPEMAS)*, *8*(1), 173–189. https://doi.org/10.33474/jipemas.v8i1.22638

Subroto, D. E., Supriandi, S., Wirawan, R., & Rukmana, A. Y. (2023). Implementasi teknologi dalam pembelajaran di era digital: Tantangan dan peluang bagi dunia pendidikan di Indonesia. *Jurnal Pendidikan West Science*, *1*(7), 473–480. https://doi.org/10.58812/jpdws.v1i07.542

Sudriyanto, S., Malik, K., & Listrianti, F. (2024). Peningkatan literasi digital melalui pemanfaatan teknologi informasi di SMP Negeri 3 Sumberasih Satu Atap Probolinggo. *Abhakte: Jurnal Pengabdian Kepada Masyarakat*, *2*(2), 1–8. https://doi.org/10.24929/abhakte.v2i2.3399

Susmanto, S., Munawir, M., Yanti, Y., Zulfan, Z., Samsuddin, S., Hidayat, T., Sa'adah, N., Andiansyah, T., Elvitriana, E., & Maulinda, M. (2026). Mewujudkan transformasi digital di SMA Negeri 5 Takengon berbasis Platform EDU SMART. *Komunita: Jurnal Pengabdian dan Pemberdayaan Masyarakat*, *5*(1), 355–368. https://doi.org/10.60004/komunita.v5i1.475

Suwardhani, A. D., Angio, S. T., Malintang, J., Romadon, S., Dahlia, N. N., & Litaqia, W. (2025). Manajemen pendidikan berbasis teknologi. *Indonesian Research Journal on Education*, *5*(4). https://doi.org/10.31004/irje.v5i4.3258

Syahid, I. A., & Pembangunan, H. R. P. (2024). Alkapro.site: Transformation of education and management at Muhammadiyah Al-Kautsar Junior High School Special Program through digital school implementation. *Manajerial: Jurnal Inovasi Manajemen dan Supervisi Pendidikan*, *4*(3), 111–120. https://doi.org/10.51878/manajerial.v4i3.3664

Syahri, P., Harahap, H. S., & Siregar, D. A. (2025). Optimalisasi Sistem Informasi Manajemen Kesiswaan (SIMKES) dalam pengelolaan data kesiswaan: Studi kajian pustaka. *Mudabbir: Journal Research and Education Studies*, *5*(2), 2373–2384. https://doi.org/10.56832/mudabbir.v5i2.1550

Taufiqurrahman, A. N., & Wasiran, W. (2025). Penyuluhan transformasi digital untuk meningkatkan efisiensi operasional di SMK YP Karya 1, Kota Tangerang, Banten. *Community Service Articles*, *2*(2), 33–40. https://doi.org/10.65344/comers.v2i2.159

Triwiyanto, T., Kusumaningrum, D. E., & Sobri, A. Y. (2024). Hambatan implementasi sistem manajemen akuntabilitas di sekolah dasar negeri. *Scholaria: Jurnal Pendidikan dan Kebudayaan*, *14*(2), 119–132. https://doi.org/10.24246/j.js.2024.v14.i2.p119-132

Triyunita, H., Yana, N., Bachtiar, M. H., & Abdurrahmansyah, A. (2025). Transformasi digital terhadap kompetensi guru dalam pendidikan. *JIIP - Jurnal Ilmiah Ilmu Pendidikan*, *8*(4), 4364–4368. https://doi.org/10.54371/jiip.v8i4.7715

UNESCO. (2021). *Reimagining our futures together: A new social contract for education*. UNESCO Publishing.

Veronita, I., Setiawan, M., & Kurniawan, M. R. N. (2025). Education 5.0: Menata ulang paradigma manajemen untuk sekolah yang tangguh dan inovatif. *Jurnal IKA PGSD (Ikatan Alumni PGSD) UNARS*, *16*(1), 139–139. https://doi.org/10.36841/pgsdunars.v16i1.7206

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, *28*(2), 118–144. https://doi.org/10.1016/j.jsis.2019.01.003

Wahyudi, A. B., Sufanti, M., Prabawa, A. H., Rahmawati, L. E., Pratiwi, D. R., Purnomo, E., Noviana, S. T., & Febriyanti, R. (2023). Penguatan literasi digital melalui pelatihan Microsoft PowerPoint di SMK Muhammadiyah. *Warta LPM*, *26*(3), 363–374. https://doi.org/10.23917/warta.v26i3.1717

Westerman, G., Bonnet, D., & McAfee, A. (2014). *Leading digital: Turning technology into business transformation*. Harvard Business Review Press.

Widiastuti, W., Rohayanah, & Purnamaningsih, I. R. (2025). Manajemen mutu pendidikan berbasis digital: Pengaruh implementasi sistem informasi pendidikan terhadap kinerja akademik di perguruan tinggi. *Journal Development*, *13*(1), 161–173. https://doi.org/10.53978/jd.v13i1.572

Wilfridus, N., Wulan, M. P., Zulaikha, S., & Takdir, M. (2025). Peran teknologi dalam reformasi manajemen pendidikan di era digital. *Jurnal Pengabdian Masyarakat dan Riset Pendidikan*, *3*(4), 5381–5388. https://doi.org/10.31004/jerkin.v3i4.1429

Yaspan, M. A. F. A.-G., Syofiyanti, D., Banat, A., & Purnomo, D. E. H. (2025). Transformasi digital pendidikan: Studi kasus penerapan sistem manajemen pembelajaran di MTs Madinatun Najah. *Action Research Journal Indonesia (ARJI)*, *7*(4). https://doi.org/10.61227/arji.v7i4.639

Yopi, M., Armiwirayanti, N. P., & Juliastuti, R. (2025). Optimalisasi media digital dalam pengembangan keterampilan komunikasi dan penyiaran di sekolah vokasi (Studi kasus SMK Letris Indonesia). *Jurnal Public Relations (J-PR)*, *6*(1), 55–61. https://doi.org/10.31004/jpr.v6i1.9459

Yusrianti, I., & Susanti, E. (2025). Optimalisasi manajemen tenaga pendidik dan kependidikan dalam meningkatkan mutu pendidikan di era digital. *Indo-MathEdu Intellectuals Journal*, *6*(7), 10785–10796. https://doi.org/10.54373/imeij.v6i7.4499

Yusuf, S. M., & Kamariah, S. (2025). Transformasi digital dalam pendidikan: Analisis literatur terhadap implikasi teknologi terhadap praktik kependidikan. *Al-Zayn*, *3*(2), 1240–1248. https://doi.org/10.61104/alz.v3i2.1356