

Paradigm Shift and Strengthening Educational Management in the Global Era

Uli Anto Hutagalung^{1*}, Rosnelli², Novita³

{uliantohtutagalung@gmail.com¹, rosnelli@unimed.ac.id², noviade@unimed.ac.id³}

¹ Islamic Religious Education, Universitas Muhammadiyah Tapanuli Selatan North Sumatra Indonesia, ²Department of Electrical Engineering Education, Faculty of Engineering, Universitas Negeri Medan, Indonesia, ³Department of Sports Coaching Education, Universitas Negeri Medan, Indonesia

Abstract. The global era has brought profound changes in the governance and management of educational institutions, particularly vocational high schools (SMK). Rapid technological advancement, shifting labor market demands, and increased international competition have required SMKs to reorient their management practices toward more responsive, adaptive, and future-oriented models. This study aims to explore the paradigm shift and identify strategies for strengthening educational management in SMKs in response to global challenges. A qualitative case study approach was employed, with data collected through in-depth interviews, observations, and document analysis involving principals, teachers, and administrative staff from three vocational high schools in Sibolga City. The findings reveal a shift from conventional, bureaucratic administrative management toward adaptive management, characterized by data-driven planning, digital-based management information systems, and strengthened partnerships with business and industry sectors (DUDI). Transformational leadership and strategic management were found to play a crucial role in supporting this transformation by aligning institutional goals with external demands and fostering a culture of continuous improvement. The results indicate that innovation, digitalization, and collaborative governance are essential for enhancing the sustainability and global competitiveness of vocational education institutions. This study highlights the importance of rethinking educational management paradigms in SMKs and provides a foundation for designing development strategies that strengthen institutional leadership, optimize resource utilization, and improve the relevance of vocational education in the global era.

Keywords: Educational management; vocational high schools (SMK); qualitative case study; digital management; industry partnership.

1 Introduction

Education plays a strategic role in shaping human resources capable of responding to social, economic, and technological transformations in the global era. Beyond the transmission of knowledge, education functions as a fundamental instrument for human development, social mobility, and national competitiveness [1]. In this context, educational institutions are

increasingly required to adopt adaptive management practices that align educational goals with global demands while maintaining humanistic and social values.

The acceleration of globalization and digital transformation has triggered a paradigm shift in educational governance. Educational institutions that were previously viewed primarily as social entities are now expected to operate with managerial efficiency, accountability, and outcome orientation similar to economic organizations [2]. This shift places increasing pressure on school management to integrate strategic planning, digital governance, and performance-based evaluation in order to remain relevant and sustainable. Consequently, strengthening educational management has become a critical issue in contemporary educational discourse.

At the vocational secondary education level, particularly in Vocational High Schools (Sekolah Menengah Kejuruan/SMK), these challenges are more pronounced. SMKs are mandated to produce graduates who are not only technically competent but also adaptive, innovative, and aligned with the evolving needs of the business and industrial sectors (DUDI) [3]. This mandate requires vocational schools to implement management systems that emphasize curriculum relevance, industry partnerships, digital management information systems, and transformational leadership [4]. However, in practice, many SMKs still rely on conventional administrative management models that are less responsive to rapid global and technological changes.

Previous studies on educational management have largely focused on conceptual discussions, policy analysis, or partial aspects such as leadership or curriculum management [5]. Empirical studies that holistically examine how paradigm shifts in educational management are implemented in vocational high schools particularly those integrating digital governance and industry partnerships remain limited, especially within the Indonesian context [6]. Moreover, few qualitative case studies have explored how SMK management practices adapt to global pressures at the institutional level.

Based on this research gap, this study aims to explore the paradigm shift and strategies for strengthening educational management in vocational high schools in the global era. Specifically, this research seeks to address the following questions:

1. How is the paradigm shift reflected in educational management practices in vocational high schools?
2. What strategies are implemented by SMKs to strengthen educational management in response to global challenges?

By employing a qualitative case study approach in selected vocational high schools in Sibolga City, this study is expected to contribute empirical insights into the transformation of SMK management practices. The findings are anticipated to enrich the discourse on educational management by highlighting practical strategies for strengthening vocational education governance in the context of globalization and digital transformation.

1.1 The Concept of Educational Management

Educational management refers to a systematic and integrated process of planning, organizing, implementing, and controlling educational resources to achieve institutional goals effectively and efficiently. In contemporary perspectives, educational management extends beyond

administrative routines and emphasizes strategic leadership, organizational adaptability, and continuous improvement in response to environmental change [7-8].

In the context of the global and digital era, educational management has undergone a significant transformation. Schools are no longer managed solely as bureaucratic institutions but are required to function as learning organizations that are adaptive, innovative, and accountable. Modern educational management therefore places strong emphasis on data-driven decision-making, quality assurance, and performance orientation to ensure institutional sustainability and competitiveness [9].

Educational management also encompasses two interrelated dimensions: operational and strategic. The operational dimension focuses on the effective implementation of daily educational activities, including curriculum management, human resource development, and learning supervision. Meanwhile, the strategic dimension highlights the institution's capacity to anticipate future challenges, respond to technological advancements, and align educational programs with external demands such as labor market needs and societal expectations [10].

For vocational high schools (SMK), effective educational management is particularly crucial due to their mandate to prepare graduates for direct entry into the workforce. SMKs are required to manage not only internal school resources but also external relationships with business and industry sectors (DUDI). This necessitates management practices that integrate curriculum relevance, partnership governance, and digital management information systems to support competency-based education [11]. Furthermore, the integration of information technology has become an essential component of modern educational management. Digital management information systems enable school leaders to monitor performance, manage resources transparently, and support evidence-based planning. In vocational education, such systems facilitate the alignment between learning outcomes and industry standards, thereby enhancing institutional accountability and graduate employability [12].

Based on these perspectives, educational management in vocational high schools must be understood as a dynamic and strategic process that balances efficiency, adaptability, and humanistic values. These conceptual foundations serve as the analytical lens for examining management transformation and strengthening strategies in vocational high schools within this study.

1.2 Management Theories Relevant to the School Context

Educational management practices in schools are influenced by various management theories that evolve in response to organizational complexity and environmental change. Classical management theory, as proposed by Fayol, emphasizes fundamental managerial functions such as planning, organizing, directing, coordinating, and controlling. These principles provide a foundational framework for school administration, particularly in establishing organizational order, role clarity, and procedural efficiency. Although classical in nature, these functions remain relevant as a structural basis for educational institutions [13].

However, reliance on classical management alone is insufficient to address contemporary challenges faced by schools in the global era. Human relations theory highlights the importance of interpersonal relationships, motivation, and communication in organizational effectiveness. Within school contexts, this perspective underscores the role of principals in fostering collaborative cultures, enhancing teacher engagement, and creating supportive work environments conducive to innovation.

In response to rapid technological change and increasing global competition, modern management theories have gained prominence, particularly transformational leadership and strategic management. Transformational leadership emphasizes visionary leadership, inspiration, and empowerment of organizational members to achieve shared goals. Empirical studies indicate that transformational leadership contributes significantly to teacher commitment, organizational learning, and the development of a quality-oriented school culture.

Strategic management, on the other hand, focuses on aligning institutional vision, mission, and resources with external opportunities and challenges. In educational settings, strategic management enables schools to respond proactively to changes in policy, technology, and labor market demands. This approach is particularly relevant for vocational high schools (SMK), which must continuously adjust curricula, learning models, and partnerships to ensure graduate relevance and employability [14].

Within the context of vocational education, the integration of transformational leadership and strategic management provides a comprehensive analytical framework. Transformational leadership supports internal capacity building and cultural change, while strategic management facilitates external alignment through industry partnerships, digital governance, and long-term planning. Together, these theories offer a robust lens for interpreting how educational management is strengthened in SMKs amid global and digital transformations.

Accordingly, this study primarily employs transformational leadership and strategic management as analytical frameworks to examine the paradigm shift and strengthening of educational management practices in vocational high schools.

1.3 Elements of Educational Management in Vocational High Schools (SMK)

Educational management in vocational high schools (SMK) involves the coordination of multiple interrelated elements that collectively support the achievement of vocational education objectives. These elements function as an integrated system and require effective management to ensure that learning processes align with labor market demands and global developments. Several scholars identify core elements of educational management that include human resources, financial management, facilities and infrastructure, curriculum, and time management [15].

Human resources constitute a central element in SMK management, encompassing principals, teachers, administrative staff, and supporting personnel. Effective management of human resources focuses on capacity building, professional development, performance evaluation, and leadership practices that encourage collaboration and innovation. In vocational education, teachers are also expected to possess industry-relevant competencies, making continuous training and industry exposure an essential managerial priority.

Financial management represents another critical element, as vocational education requires substantial investment in equipment, laboratories, and industry-based learning programs. Transparent and accountable financial management enables SMKs to allocate resources strategically, support instructional innovation, and sustain partnerships with business and industry sectors. Sound financial governance is therefore a prerequisite for ensuring both efficiency and institutional credibility [16].

Facilities and infrastructure play a vital role in supporting competency-based vocational learning. Workshops, laboratories, digital learning tools, and industry-standard equipment must

be managed effectively to ensure accessibility, safety, and relevance to current industry practices. Studies indicate that adequate and well-managed infrastructure significantly enhances the effectiveness of vocational training and students' readiness for the workforce.

Curriculum management in SMKs is closely linked to external collaboration, particularly with the business and industrial sectors (DUDI). Curriculum relevance is maintained through continuous alignment with industry standards, competency mapping, and feedback from stakeholders. This process requires schools to adopt adaptive curriculum management practices that integrate project-based learning, work-based learning, and digital technologies.

In addition to these traditional elements, information technology has emerged as a strategic component of modern educational management. Digital management information systems enable school leaders to conduct data-driven planning, monitor performance, and enhance transparency in decision-making. In the SMK context, digital systems support the management of learning outcomes, industry partnerships, and tracer studies of graduates, thereby strengthening institutional accountability [16].

Taken together, these elements serve as analytical indicators for examining educational management practices in vocational high schools. In this study, the management of human resources, finance, infrastructure, curriculum, and digital systems is used as a framework for analyzing how SMKs strengthen their management practices in response to global and technological challenges.

2 Research Method

This study employed a qualitative research approach using a case study design to explore the paradigm shift and strengthening of educational management in vocational high schools (Sekolah Menengah Kejuruan/SMK) within the global era. A qualitative case study was chosen to enable an in-depth understanding of management practices, leadership dynamics, and institutional strategies as they are implemented in real educational settings.

The research was conducted in three vocational high schools located in Sibolga City, North Sumatra. These schools were selected using purposive sampling based on specific criteria, including: (1) implementation of quality-oriented management practices, (2) utilization of digital management systems, and (3) active collaboration with business and industrial sectors (DUDI). This selection was intended to capture management practices that reflect adaptation to global and technological challenges.

Participants in this study consisted of nine informants, including three school principals, four vocational subject teachers, and two administrative staff members. The informants were selected based on their direct involvement in school management and decision-making processes. This criteria-based sampling approach ensured that the data collected were relevant and information-rich for understanding educational management transformation in SMKs.

Data collection techniques included in-depth semi-structured interviews, non-participant observations, and document analysis. Interviews focused on key themes such as digital-based planning and supervision, leadership practices, industry partnership management, and strategies for strengthening institutional governance. Observations were conducted to examine daily management practices, coordination mechanisms, and the use of digital systems in school

administration. Document analysis involved reviewing school planning documents, partnership agreements, and internal evaluation reports.

To ensure data credibility and trustworthiness, this study employed triangulation of data sources and methods. Member checking was also conducted by sharing preliminary findings with selected participants to confirm the accuracy of interpretations and to enhance the validity of the results.

Data analysis followed the interactive model proposed by Miles, Huberman [17], which consists of data reduction, data display, and conclusion drawing/verification conducted iteratively throughout the research process. This analytical process enabled the identification of patterns, themes, and relationships related to the paradigm shift and strengthening of educational management in vocational high schools.

3 Result

This section presents the empirical findings derived from in-depth interviews, observations, and document analysis conducted in three vocational high schools (SMK) in Sibolga City. The findings reveal a clear paradigm shift in educational management practices, moving from conventional, bureaucratic administrative management toward adaptive, digital-oriented, and partnership-based governance. The results are organized into four main thematic areas: management planning, organizational practices, leadership and implementation, and supervision and evaluation.

1. Shift in Management Planning Practices

The findings indicate that management planning practices in the selected SMKs have undergone a significant transformation. School planning processes have gradually shifted from top-down administrative routines, which were previously dominated by preset templates and formalistic procedures, toward more data-driven and collaborative approaches. Principals reported that graduate tracer studies, feedback from industry partners, and internal performance data have been systematically used as the basis for annual school planning, curriculum revision, and the development of school work programs [18]

Document analysis further confirmed that industry needs and labor market demands have been increasingly integrated into curriculum planning, teaching schedules, and program development. Strategic priorities such as the alignment of graduate competencies with industry standards and the improvement of employability outcomes were explicitly stated in school plans and institutional documents. This approach reflects the adoption of strategic management principles, in which institutional goals are deliberately aligned with external demands, particularly from the business and industrial sectors (DUDI).

2. Increasing Flexibility and Collaboration in Organizational Practices

The findings on organizational practices demonstrate that traditional hierarchical structures are being complemented by more flexible and collaborative arrangements. Observational data revealed that cross-functional work teams-comprising teachers, department heads, and administrative staff-have been established to coordinate key functions such as industry partnerships, project-based learning, and the operation of digital learning platforms. These teams were observed to meet regularly to plan and monitor activities, assign responsibilities, and solve operational problems collectively.

Teachers emphasized that these collaborative organizational arrangements have improved communication across levels, increased responsiveness to emerging issues, and strengthened collective problem-solving within the schools. Decision-making was reported to be less centralized and more participatory, particularly in matters related to curriculum development, assessment policies, and the use of digital tools. This organizational shift supports findings from prior studies, which emphasize that collaborative culture, shared responsibility, distributed leadership, and the implementation of total quality management contribute significantly to improving the effectiveness and quality of vocational schools [19].

3. Transformational Orientation in Leadership and Implementation

The findings on leadership and implementation practices reveal that school principals function as central change agents in the process of innovation and digital transformation. Interview data indicated that leadership practices in the selected SMKs are characterized by a transformational orientation, in which principals encourage teacher initiative, support professional development—particularly in digital competencies and facilitate partnerships with industry stakeholders.

Leadership roles were observed to include the promotion of a shared vision for school development, the allocation of resources for infrastructure improvement, and the creation of supportive environments for experimentation with new teaching methods. Learning implementation has increasingly incorporated project-based learning and work-based learning models, which are supported by digital technologies such as online platforms, learning management systems, and multimedia learning resources. These practices align with transformational leadership principles that emphasize collaboration, partnership development, teacher empowerment, and institutional adaptability in responding to external changes and challenges [20].

4. Digital and Outcome-Based Approaches in Supervision and Evaluation

The findings further show that supervision and evaluation systems have shifted toward more digital and outcome-based approaches. Previously, supervision was largely based on routine classroom visits and paper-based observation forms; now, digital tools are increasingly used to monitor teaching quality, track student progress, and evaluate program effectiveness. Supervision data are reported to be collected through online forms, digital portfolios, and analytics from learning management systems, which enable more systematic and timely feedback.

Evaluation has also become more oriented toward measurable outcomes, such as student competency achievements, graduate employability rates, and industry feedback. Schools were observed to use performance indicators and benchmarking data to assess the effectiveness of their programs and to inform subsequent planning cycles. This shift toward digital and outcome-based supervision and evaluation supports the broader movement toward data-driven management and evidence-informed decision-making in vocational education.

Table 1. Summary of Empirical Findings on Educational Management Strengthening in SMKs

Management Aspect	Empirical Findings	Evidence Source
Planning	Shift toward data-driven and industry-based planning	Interviews with principals; school planning documents
Organizing	Flexible, collaborative teams replace rigid hierarchies	Observations; teacher interviews
Leadership & Implementation	Transformational leadership supporting innovation and digital learning	Interviews; classroom and management observations
Supervision & Evaluation	Digital monitoring and outcome-based evaluation systems	Document analysis; administrative observations

Overall, these findings demonstrate that the paradigm shift in educational management within vocational high schools is not merely conceptual but is reflected in concrete managerial practices. The strengthening of educational management in SMKs is characterized by strategic planning, collaborative organization, transformational leadership, and digital-based supervision systems. These practices collectively enable vocational schools to adapt to global challenges and enhance their institutional sustainability.

4 Discussion

The findings of this study indicate that the paradigm shift in educational management within vocational high schools (SMK) is manifested through concrete managerial practices rather than remaining at a conceptual level. The transition from conventional administrative management toward adaptive, digital-oriented, and partnership-based governance reflects a broader transformation in how vocational education institutions respond to globalization and technological change.

In terms of planning, the shift toward data-driven and industry-based planning observed in the selected SMKs aligns with the principles of strategic management. Strategic management emphasizes the alignment between institutional goals and external environmental demands, particularly labor market needs, industry partnerships, and technological developments [20][21]. The use of tracer studies, industry feedback, and internal performance data demonstrates that SMKs are increasingly adopting demand-driven planning approaches, moving away from supply-oriented and bureaucratic planning models. This finding supports previous studies that highlight the importance of aligning vocational education with workforce requirements and graduate employability [22].

Organizational changes identified in this study further reinforce the application of modern management perspectives. The emergence of flexible and collaborative work teams indicates a

departure from rigid hierarchical structures toward participatory and adaptive organizational models. This organizational shift is consistent with human relations theory, which emphasizes collaboration, communication, and empowerment as key factors in organizational effectiveness [22]. In the SMK context, collaborative organizational practices facilitate cross-departmental coordination and strengthen the management of industry partnerships, thereby enhancing institutional responsiveness to external change.

Leadership practices observed in the selected SMKs strongly reflect the characteristics of transformational leadership. Principals act as change agents who articulate a shared vision, encourage innovation, and support teacher professional development, particularly in digital competencies. These findings corroborate empirical evidence suggesting that transformational leadership contributes to teacher commitment, organizational learning, and the development of a quality-oriented school culture. Such leadership is crucial for managing organizational change, fostering innovation, and strengthening institutional adaptability in response to evolving educational demands [23].

The findings related to supervision and evaluation indicate a significant shift toward digital and outcome-based management systems. The implementation of digital management information systems enables real-time monitoring, transparency, and evidence-based decision-making. This approach aligns with contemporary perspectives on educational management that emphasize accountability and performance measurement beyond administrative compliance by extending evaluation criteria to include graduate employability and industry satisfaction. SMKs demonstrate an outcome-oriented management paradigm that focuses on long-term institutional impact rather than short-term outputs.

Collectively, these findings suggest that strengthening educational management in vocational high schools requires the integration of transformational leadership and strategic management. Transformational leadership facilitates internal cultural change and capacity building, while strategic management ensures external alignment with global and industry demands. The synergy between these approaches enables SMKs to function as adaptive learning organizations capable of sustaining quality and competitiveness in the global era.

Thus, this study contributes to the existing literature by providing empirical evidence of how paradigm shifts in educational management are operationalized at the institutional level in vocational high schools. Unlike prior studies that predominantly emphasize conceptual or policy-oriented discussions, this research demonstrates that management transformation in SMKs is shaped by practical strategies involving digital governance, collaborative organization, and industry-based partnerships.

Practical Implications

Based on the findings of this study, several practical implications can be formulated to support the strengthening of educational management in vocational high schools (SMK) in the global era.

First, school leaders need to shift their managerial mindset from routine-based administrative practices toward strategic and data-driven management. The findings indicate that planning based on industry needs, tracer studies, and internal performance data enhances institutional responsiveness and relevance. Therefore, SMK principals should be encouraged to utilize

management information systems as tools for evidence-based decision-making and long-term strategic planning [23].

Second, strengthening educational management requires continuous development of human resources, particularly in leadership and digital competencies. Transformational leadership practices observed in this study demonstrate the importance of empowering teachers, fostering collaboration, and supporting professional development. Training programs for school leaders and teachers should therefore integrate leadership development, digital literacy, and innovation management to support sustainable organizational change.

Third, the findings highlight the strategic importance of partnerships with business and industry sectors (DUDI). Effective collaboration supports curriculum relevance, work-based learning, and graduate employability. As a result, SMKs should institutionalize partnership management through formal agreements, joint curriculum development, and regular evaluation involving industry stakeholders. Such network-based management strengthens both internal governance and external alignment with labor market demands.

Overall, these practical implications emphasize that strengthening educational management in vocational schools must address both internal organizational capacity and external collaborative networks in order to remain competitive and sustainable in the global context.

5 Conclusion

This study examined the paradigm shift and strengthening of educational management in vocational high schools (SMK) in the global era using a qualitative case study approach conducted in selected SMKs in Sibolga City. The findings demonstrate that educational management in SMKs has shifted from conventional administrative practices toward adaptive, strategic, and digitally oriented management models. The results indicate that strengthening educational management is characterized by data-driven and industry-based planning, flexible and collaborative organizational structures, transformational leadership practices, and digital-based supervision and evaluation systems. The integration of transformational leadership and strategic management enables vocational schools to respond effectively to global challenges, technological change, and labor market demands. Despite these contributions, this study has several limitations. The research was conducted in a limited number of vocational high schools within a single geographic area, which may restrict the generalizability of the findings. In addition, the qualitative approach emphasizes depth of understanding rather than broad statistical representation. Future research is therefore recommended to involve a wider range of vocational schools across different regions and to employ mixed-method approaches to further examine the relationship between educational management practices and student outcomes, graduate employability, and institutional performance. Such studies would contribute to a more comprehensive understanding of vocational education management in diverse contexts. In conclusion, strengthening educational management through strategic leadership, digital governance, and industry collaboration is essential for vocational high schools to enhance their relevance, sustainability, and competitiveness in the global era.

References

- [1] Da, "Educational governance in contemporary schools," *Ilomata International Journal of Social Science*, vol. 4, no. 3, 2023
- [2] Hasan Basri and Salfen Hasri, "Modern Education Management : Challenges , Strategies Towards a Future of Continuing Education" 5 (2024): 260–69.
- [3] Deny Setiawan et al., "The Vocational High School Strategy in Increasing Partnerships with Business and Industry" 8, no. 1 (2024): 120–33.
- [4] Din Oloan Sihotang, "Optimalisasi Penggunaan Google Class Room Dalam Peningkatan Minat Belajar Bahasa Inggris Siswa Di Era Revolusi Industri 4.0," *Jurnal Teknologi Kesehatan Dan Ilmu Sosial (Tekesos)* 1, no. 1 (2019): 77–81.
- [5] Ubaidah, S. Trisnamansyah, H. Insan, and N. Harahap, "Partnership management between vocational schools and industry to improve graduate readiness," *International Journal of Nusantara Islam*, vol. 9, no. 1, pp. 58–69, 2021, doi:10.15575/ijni.v9i1.11818.
- [6] Ilyas Suharto Sitorus et al., "Competency Planning Strategies of Junior High School Teachers in Increasing Competitiveness" 488, no. Aisteel (2020): 236–41.
- [7] H. U. Kasanah, M. N. Sari, and E. Purwanto, "Curriculum management in vocational education institutions," *Journal of Curriculum Studies*, vol. 4, no. 2, pp. 1229–1240, 2025.
- [8] Trilling and C. Fadel, *21st Century Skills: Learning for Life in Our Times*. San Francisco, CA, USA: Jossey-Bass, 2009
- [9] Bagensa, H. Lumapow, and R. Mongdong, "The role of school principals in improving education quality," *Indonesian Journal of Multidisciplinary Science*, vol. 5, no. 2, pp. 41–50, 2025.
- [10] Wibowo, S. S. Iriani, R. Sulistyowati, M. A. Khakim, N. R. Yulia, and R. N. Sucihati, "Unpacking the landscape of digital and corporate entrepreneurship: A systematic literature review," *Journal of Digital Business*, vol. 18, no. 3, pp. 5–11, 2025
- [11] Rajagukguk, J., Sihotang, D. O., Situmorang, B., & Rahman, A., "A superior Leadership style in Schools (Case study at SMA Negeri 1 Medan)," In *The 5th Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2020)*, pp. 277-280, 2020
- [12] Anisyyah, Nur, T. Rohman, S. Novalina, P. Rahmi, V. Lubis, and R. Ariyani, "The role of information technology in enhancing educational management," *Ilomata International Journal of Social Science*, vol. 4, no. 3, pp. 136–147, 2023.
- [13] H. Fayol, *General and Industrial Management*. Martino Publishing, 2013.
- [14] Asiah, A. Sanusi, Hanafiah, and A. Mulyanto, "Implementation of partnership between vocational high schools and industry to improve graduate competence," *Journal of Educational Management*, vol. 1, no. 4, pp. 303–311, 2022.
- [15] Basri and S. Hasri, "Modern educational management: Challenges and strategies toward continuing education," *Journal of Educational Development*, vol. 5, pp. 260–269, 2024.
- [16] Manaf, "Educational management in the digital age: Integrating technology for student success," *Al-Ishlah: Jurnal Pendidikan*, vol. 16, no. 2, pp. 1451–1461, 2024, doi:10.35445/alishlah.v16i2.4919.
- [17] Miles, A. M. Huberman, and J. Saldaña, *Qualitative Data Analysis: A Methods Sourcebook*, 4th ed. Thousand Oaks, CA, USA: SAGE Publications, 2020.
- [18] Nurrahman and S. Marmoah, "Relationship management between schools and communities: A POAC approach," *Journal of Learning and Education*, vol. 2, no. 1, pp. 11–20, 2025, doi:10.38040/jeleduc.v2i1.1243.
- [19] Wismayanti, "Impact of total quality management on education quality in vocational schools," *Al-Ishlah: Jurnal Pendidikan*, vol. 17, no. 2, pp. 2261–2270, 2025, doi:10.35445/alishlah.v17i2.4701.
- [20] Meirawan, D., Komariah, A., Kurniady, D. A., Kurniawan, E., Asri, K. H., Sururi, S., Rahyasih, Y., Sutarsih, C., & Rahman, F. S. (2022). Leadership in fostering vocational school partnerships in the time of COVID-19. *International Journal of Health Sciences (IJHS)*, 1300–1315. <https://doi.org/10.53730/ijhs.v6ns6.10672>

- [21] Anisa, D. N., & Hidayati, D. (2024). Implementasi kepemimpinan digital pada keterampilan abad 21 life and career skills di SMK. *Academy of Education Journal: Jurnal Ilmu-Ilmu Kependidikan*, 15(1), 773–786. <https://doi.org/10.47200/aoej.v15i1.2311>
- [22] Jaedun, A., Omar, M. K., Kartowagiran, B., & Istiyono, E. (2020). A precedence evaluation of demand and supply between vocational high school graduates and workforce requirement in Indonesia. *Jurnal Penelitian Dan Evaluasi Pendidikan*, 24(1), 27–38. <https://doi.org/10.21831/PEP.V24I1.29580>
- [23] Jayanagara, O. (2024). The evolution of leadership in the modern professional landscape: shifting paradigms and their impacts. *Feedforward*. <https://doi.org/10.19166/ff.v4i1.8198>