

# STEPPING INTO THE DIGITAL ERA: TRANSFORMATION OF SCHOOL ADMINISTRATION EFFICIENCY AND EDUCATIONAL MANAGEMENT THROUGH THE ROLE OF INFORMATION TECHNOLOGY

Samuel Urath<sup>1</sup>

<sup>1</sup>Universitas Lelemuku Saumlaki, Jl. Prof. Dr Jl. Boediono, Luran, Tanimbar, Maluku, Indonesia

Email: [urathsamuel@gmail.com](mailto:urathsamuel@gmail.com)

---

## Article History

Received: 03-05-2024

Revision: 06-05-2024

Accepted: 07-05-2024

Published: 08-05-2024

**Abstract.** The rapid development of information and communication technology has had a significant impact on various sectors, including education. Innovations such as database management systems, e-learning platforms, and administrative applications have become integral parts of modern school administration. This research aims to explore the strategies and challenges in stepping into the digital era in the context of education, as well as offer insights into how information technology can be effectively implemented to enhance administrative efficiency and educational management. This research method employs a qualitative approach with a focus on literature review and descriptive analysis. Data for this research were obtained from Google Scholar with a range of years from 2019 to 2024. The author searched for articles in reputable academic journals relevant to the research topic including digital era, school administration, education management, information technology. Initially, 50 articles were identified, but through rigorous selection based on relevance and quality, 34 articles most appropriate for this dissertation were utilised. The study results indicate that the transformation of school administration efficiency and educational management through information technology is a necessity in this digital era. The role of information technology is not only as a tool but also as a primary catalyst driving fundamental change in education. The adoption of technology-based school and education management systems, administrative processes become faster, more efficient, and accurate.

**Keywords:** Administration, Educational Management, Information Technology

**Abstrak** Pesatnya perkembangan teknologi informasi dan komunikasi telah memberikan dampak besar pada berbagai sektor, termasuk pendidikan. Inovasi seperti sistem manajemen basis data, platform e-learning, dan aplikasi administrasi telah menjadi bagian integral dari administrasi sekolah modern. Penelitian ini bertujuan untuk mengeksplorasi strategi dan tantangan dalam melangkah ke era digital dalam konteks pendidikan, serta menawarkan wawasan tentang bagaimana teknologi informasi dapat diimplementasikan secara efektif untuk meningkatkan efisiensi administrasi dan manajemen pendidikan. Metode penelitian ini menggunakan pendekatan kualitatif dengan fokus pada tinjauan pustaka dan analisis deskriptif. Data untuk penelitian ini diperoleh dari Google Scholar dengan rentang tahun 2019-2024. Penulis mencari artikel dalam jurnal akademik terkemuka yang relevan dengan topik penelitian antara lain era digital, administrasi sekolah, manajemen pendidikan, teknologi informasi. Pada awalnya, 50 artikel diidentifikasi, tetapi melalui seleksi ketat berdasarkan relevansi dan kualitas, 34 artikel yang paling sesuai untuk disertasi ini digunakan. Hasil studi menunjukkan bahwa transformasi efisiensi administrasi sekolah dan manajemen pendidikan melalui teknologi informasi merupakan sebuah keniscayaan di era digital ini. Peran teknologi informasi tidak hanya sebagai alat bantu, tetapi juga sebagai katalisator utama yang mendorong perubahan fundamental dalam pendidikan. Adopsi sistem manajemen sekolah dan pendidikan berbasis teknologi, proses administrasi menjadi lebih cepat dan efisien.

**Kata Kunci:** Administrasi, Manajemen Pendidikan, Teknologi Informasi

---

**How to Cite:** Urath, S. (2024). Stepping into the Digital Era: Transformation of School Administration Efficiency and Educational Management through the Role of Information Technology. *Indo-MathEdu Intellectuals Journal*, 5 (2), 2009-2020. <http://doi.org/10.54373/imeij.v5i2.1004>

---

## INTRODUCTION

The rapid development of information and communication technology (ICT) has had a significant impact across various sectors, including education (Fauzi et al., 2023). Various innovations such as database management systems (Heriyanto et al., 2022), e-learning platforms, and administrative applications have become indispensable components in modern school administration. This technology has enabled educational institutions to manage data more efficiently, enhance accessibility to learning materials through digital platforms, and streamline administrative processes overall (Ausat, 2022).

The implementation of school administration still reliant on manual processes tends to consume valuable time, expend resources, and is prone to errors. Data management processes involving student information, attendance records, class schedules, and communication with parents often become complex and less efficient in the absence of appropriate information technology support (Heyne et al., 2024). This can lead to an inability to respond to administrative needs in a timely and accurate manner (Musheke & Phiri, 2021). The implementation of integrated and advanced technological solutions becomes crucial in improving school administrative processes, minimizing potential errors, and enhancing overall efficiency and productivity.

The need for efficiency, accuracy, and transparency in education management is becoming increasingly pressing. Educational institutions, including schools, are faced with demands to manage data carefully and efficiently, monitor individual student progress meticulously, and provide quick and appropriate responses to various emerging educational needs (Darling-Hammond et al., 2020). In facing the complexity dynamics in the education world, the need for technologically integrated solutions becomes even more critical. Information technology plays a crucial role in supporting these efforts by providing tools that enable educational institutions to gather, analyze, and manage data effectively, as well as provide relevant and real-time information to support better decision-making processes (Kurniawan, 2022).

Information technology provides vast opportunities to change the paradigm in administrative management and educational management in schools. The presence of integrated school information systems, innovative e-learning platforms, and adaptive mobile applications promise easier and faster access to relevant information for all parties involved in the education ecosystem (Gligorea et al., 2023). With the adoption of such technology, schools can optimize their administrative processes, improve operational efficiency, and deliver more dynamic and useful learning experiences for students. Furthermore, information technology also enables better collaboration among teachers, students, parents, and other stakeholders,

expanding the reach of learning beyond the classroom and supporting comprehensive monitoring and evaluation efforts of student academic progress (Swan et al., 2019).

Although the significant potential of information technology in improving administrative efficiency and educational management has been widely recognized, its implementation is often not easy. Complex challenges such as the availability of adequate infrastructure, cost aspects that can be financial barriers, the need for strict data security to protect sensitive information, and the need for comprehensive training for staff and teachers are some of the factors that often serve as significant barriers in the adoption process of information technology solutions in educational environments (Singh et al., 2023).

The transformation of school administrative efficiency and educational management through the utilization of information technology is not merely about increasing productivity but also about creating a more inclusive, responsive, and focused educational environment that aims for optimal learning outcomes for every student. The strategic use of information technology allows educational institutions to expand accessibility to learning resources, provide differentiated learning approaches according to individual needs, and integrate best practices in learning evaluation and intervention (Nicho et al., 2024). This not only enables the enhancement of equal access to education but also enriches the learning experience by considering various student needs and learning styles. Thus, the implementation of information technology in the educational context is not just a step towards operational efficiency but also a commitment to building an inclusive, responsive, and outcome-oriented education system that is sustainable and sustainable (Abulibdeh et al., 2024).

Therefore, based on the explanations above, this research aims to explore strategies and challenges in transitioning to the digital era in the context of education, as well as offering insights into how information technology can be effectively implemented to enhance administrative efficiency and educational management. Equally important, this research also aims to identify the opportunities that arise with the adoption of information technology in education, as well as to understand its impact on students' learning experience and the quality of teaching delivered by educators.

## **METHOD**

This research employs a qualitative approach with a focus on literature review and descriptive analysis. This approach aims to deeply understand the concepts and findings related to the transformation of school administration efficiency and educational management through the role of information technology. Data for this research were obtained from Google Scholar

with a range of years from 2019 to 2024. The author searched for articles in reputable academic journals relevant to the research topic including digital era, school administration, education management, information technology. Initially, 50 articles were identified, but through rigorous selection based on relevance and quality, 34 articles most suitable for this dissertation were utilized. The qualitative approach allows researchers to explore the context, differences, and implications of the findings found in the literature, while descriptive analysis will be used to provide a clear and comprehensive overview of the current status, trends, and challenges faced in adopting information technology in school administration and educational management.

## RESULTS

The Digital Era refers to a period in which information and communication technology, particularly the internet and smart devices, play a dominant role in almost every aspect of human life (Harini et al., 2023). It is an age where fast and easy access to information, global connectivity, and technology adoption are the main characteristics (Sudirjo et al., 2023). The Digital Era transforms how we work, learn, communicate, shop, and even how we think about the world. This transformation creates new opportunities, challenges, and paradigms in various fields, including education, where information technology is key to improving efficiency, accessibility, and the quality of learning (Ausat et al., 2023).

School Administration is a set of processes and activities related to the operational and organizational management of an educational institution (Azizi et al., 2023). It encompasses various administrative tasks such as student and staff data management, scheduling, attendance monitoring, budgeting, communication with parents and other stakeholders, as well as facility and resource management. School Administration aims to create an efficient, orderly, and safe learning environment, ensuring that all administrative and operational needs are met for the smooth running of the learning process (Obied Qaralleh, 2020).

Educational management refers to the process of planning, organizing, directing, and controlling educational resources to achieve established educational goals (Raharjo et al., 2023). It involves managing various aspects of education, including curriculum development, assessment of learning outcomes, organizing extracurricular activities, managing human resources in schools, and monitoring and evaluating the performance of educational institutions (Cahyono et al., 2023). Educational management aims to create an effective, efficient, and learning-oriented educational environment, ensuring that all educational processes adhere to established standards (Septianti et al., 2023).

Information technology refers to the use of hardware, software, and communication infrastructure to collect, store, process, and transfer information in various formats (Diawati et al., 2023). It includes everything from computers and communication networks to software applications, digital platforms, and database systems (Kraugusteeliana et al., 2022). Information technology plays a crucial role in facilitating fast and easy access to information, global communication, and efficient data management in various fields such as business, education, healthcare, and others (Touriano et al., 2023). With information technology, individuals and organizations can enhance productivity, expand their reach, and create new innovations in how they interact, work, and carry out daily activities (Arjang et al., 2023).

## DISCUSSION

In the rapidly evolving digital era, the transformation of school administration efficiency and educational management becomes an inevitable necessity. In this context, the role of information technology is crucial, serving not only as a tool but also as a primary catalyst driving fundamental changes in the paradigm and implementation of educational processes. Information technology not only enables the automation of administrative tasks but also facilitates more effective communication among educational stakeholders, expands accessibility to educational resources, and opens doors to innovation in teaching and learning (Elmi et al., 2024). The integration of information technology is not just an option but a strategic imperative in advancing the education system towards a brighter future.

First and foremost, let's examine the changes that have occurred in school administration. In the past, administrative processes often felt slow and complicated, involving various stages such as student attendance recording, teacher and staff data management, and schedule arrangements that consumed considerable time and effort. However, with the advancement of information technology, significant transformation has taken place. Now, all these administrative activities can be carried out more quickly, efficiently, and accurately. Technology-based school management systems, including school management applications or software, are the key to automating many aspects of administrative tasks (Maryani et al., 2023). With the adoption of this technology, schools can reduce the workload of staff, allocate resources more effectively, and ultimately enhance overall productivity in the educational environment.

Information technology not only impacts school administration but also transforms the landscape of educational management as a whole. In the past, access to information about student progress, curriculum, and exam results was often limited to educational stakeholders

such as teachers, parents, and school administrators. However, with the adoption of technology-based educational management systems, a significant paradigm shift has occurred (Haleem et al., 2022). Now, this information can be easily and quickly accessed by all relevant parties. This paves the way for more effective and synergistic collaboration among all educational stakeholders. Better collaboration allows them to work together in planning, implementing, and evaluating educational programs more efficiently and effectively (Griffiths et al., 2021).

Although information technology offers significant benefits in transforming school administration and educational management, there are several challenges that need to be addressed to ensure the smooth implementation of this technology. One major challenge is the existing digital divide, where some schools or regions may lack adequate access to technology or the infrastructure needed to adopt technology-based solutions (Afzal et al., 2023); (Heriyanto, 2022). However, this gap can be overcome through collaborative efforts between the government, educational institutions, and the private sector to improve accessibility and availability of technology across all layers of society (Heriyanto et al., 2020). Additionally, data protection and privacy issues are becoming increasingly important in the use of information technology in the educational environment. With the increasing collection and exchange of student and educational personnel data through technology-based systems, it is important for educational institutions to implement strict policies and practices in managing, protecting, and ethically using data (Liliana Măță, 2022). Thus, prioritizing digital divide mitigation and addressing data protection and privacy challenges will be key to ensuring that the use of information technology in the education sector yields maximum positive impact.

Stepping into the digital era of school administration and educational management is not a simple process but a journey involving several stages and serious efforts. Strong commitment is required from all stakeholders, ranging from the government to educational institutions, to realize this transformation. Investment in technology infrastructure and training for stakeholders is crucial to enable them to leverage technology optimally. Moreover, clear and robust policies are also needed to address challenges that may arise with the use of information technology in the educational environment, including issues such as digital divide and data protection. By taking these steps together, we can ensure that the benefits of information technology are felt by all parties evenly. Thus, we can harness the full potential of information technology to create a more efficient, inclusive, and quality educational environment in this digital era, thereby preparing the future generation to better face global challenges.

In the journey towards transforming school administration efficiency and educational management through the role of information technology, several aspects need to be carefully considered. Firstly, it is imperative to conduct comprehensive identification of various available information technology options, aiming to find solutions that best fit the needs and unique contexts of each school or educational institution. Given the diversity of characteristics and infrastructure in each educational environment, it is not appropriate to assume that one technology solution can be universally applied (Kamalov et al., 2023). Therefore, careful and in-depth analysis is required to evaluate various factors, including specific needs, available resources, technical capabilities, and the educational vision to be achieved. Through this approach, it is ensured that the adopted technology solutions are not only effective in achieving educational goals but also aligned with the conditions and unique contexts of each educational institution, ultimately optimizing desired outcomes in this digital era.

Furthermore, it should be realized that training and capacity development are key determining factors in ensuring the success of information technology adoption in the educational environment. It is not only teachers and administrative staff who need to be equipped with adequate skills and knowledge but also students and parents. This training involves not only practical usage of specific software or applications but also an in-depth understanding of how technology can be optimized to enhance student learning experiences and manage school administration more efficiently. Moreover, this training can also help build awareness of the potential and challenges associated with technology use in the educational context, facilitating proactive adoption of changing technology trends. Thus, through appropriate investment in training and capacity development, it can be ensured that all educational stakeholders are prepared to face challenges and maximize opportunities offered by this digital era (Dayagbil et al., 2021).

Additionally, it should be acknowledged that data management plays a crucial role in the context of utilizing information technology in education. With the increasing volume of data generated through the use of information technology, it becomes increasingly important to ensure that clear policies and procedures are in place to manage this data. Structured and transparent policies are needed to govern the processes of data collection, storage, and security to ensure the reliability, integrity, and security of stored information (Karamanoli et al., 2023) and (Heriyanto et al., 2020). Furthermore, data protection and privacy should be placed as top priorities in every aspect of data management, considering the sensitivity of information contained in educational records such as student academic information and personal data of educational staff. By adopting best practices in data management and compliance with relevant

regulations, it can be guaranteed that the use of information technology in the educational context not only provides significant benefits but also ensures the security and sustainability of educational institution operations in this digital era.

Collaboration between schools, government, and the private sector is also an essential element in supporting the transformation towards information technology adoption in education (Aldosemani, 2023). The government plays a central role in providing financial support and formulating policies that support the adoption of information technology in the educational environment (Chen et al., 2021). This financial support can take the form of budget allocation for technology infrastructure, training, and capacity development programs for educational stakeholders. On the other hand, technology companies also have an invaluable contribution by providing innovative solutions and resources needed to effectively implement this technology in schools. Through synergistic partnerships between the government, schools, and the private sector, an ecosystem supporting the adoption of information technology in education can be created comprehensively, accelerating the realization of changes towards more inclusive, efficient, and quality education in this digital era.

Following the efforts to implement information technology in the educational context, an important final step is the implementation of continuous evaluation to ensure that this transformation progresses as planned and delivers the expected results. Routine evaluations allow schools to identify more clearly areas where information technology can be further optimized and to measure its impact on administrative efficiency and overall educational quality (Montenegro-Rueda et al., 2023). Beyond just evaluating the technical success of implementation, these evaluations can also consider qualitative aspects such as stakeholder acceptance and engagement, as well as changes in learning processes and student achievements. By leveraging findings from these evaluations wisely, schools can continue to adapt and improve the utilization of information technology to support the achievement of their educational goals, ensuring that each step taken contributes to sustainable improvements in the educational environment in this digital era (Karakose & Tülübaş, 2023).

By carefully considering the various aspects mentioned above and involving all stakeholders effectively, we can face the future of education with stronger confidence in this digital era. The transformation process involving the adoption of information technology in school management and education is not just a step forward but also a paradigm shift that defines the future of our education. Through active engagement and collaboration between the government, educational institutions, the private sector, and the wider community, we can create an educational environment that is more adaptive, inclusive, and innovative (Zamiri &



Esmaeili, 2024). By leveraging information technology optimally, we can expand access to education, enhance learning quality, and shape students who are ready to face global challenges in this digital era. Therefore, the steps taken now will serve as a solid foundation for sustainable education transformation, leading us towards a brighter and more competitive future.

## **CONCLUSION**

Transforming the efficiency of school administration and education management through information technology is a necessity in this digital era. The role of information technology is not only as a tool, but also as the main catalyst that drives fundamental changes in education. With the adoption of technology-based school and education management systems, administrative processes become faster, more efficient and accurate. Relevant information becomes more accessible to all stakeholders, enabling better collaboration and more informed decision-making.

## **RECOMMENDATIONS**

Suggestions that can be given on the results of this study include: (1) Identify Appropriate Technology: It is important to analyse the needs and conditions of each school or educational institution to select technology solutions that are in line with the educational goals and vision to be achieved, (2) Training and Capacity Building: Teachers, administrative staff, students and parents need to be equipped with sufficient skills and knowledge to use information technology effectively, (3) Orderly Data Management: Data protection and privacy should be a top priority with clear policies and procedures in place for data collection, storage and security, (4) Collaboration between Parties: Collaboration between schools, government and the private sector is necessary to support the adoption of information technology in the education environment, both in terms of finance and resources, and (5) Continuous Evaluation: Regular evaluations need to be conducted to measure the impact of this transformation on administrative efficiency and the overall quality of education, as well as identify areas for further optimisation. By paying attention to and implementing these suggestions, the transformation to the digital era in school administration and education management can be carried out more effectively and sustainably, leading education to a better future.

## **ACKNOWLEDGMENTS**

We would like to thank all those who have contributed to the preparation of this paper.

## REFERENCES

- Abulibdeh, A., Zaidan, E., & Abulibdeh, R. (2024). Navigating the confluence of artificial intelligence and education for sustainable development in the era of industry 4.0: Challenges, opportunities, and ethical dimensions. *Journal of Cleaner Production*, 437, 140527. <https://doi.org/10.1016/j.jclepro.2023.140527>
- Afzal, A., Khan, S., Daud, S., Ahmad, Z., & Butt, A. (2023). Addressing the Digital Divide: Access and Use of Technology in Education. *Journal of Social Sciences Review*, 3(2), 883–895. <https://doi.org/10.54183/jssr.v3i2.326>
- Aldosemani, T. I. (2023). e-School Initiatives that Instigated Digital Transformation in Education: A Case Study According to SABER-ICT Framework. In *Recent Advances in Data and Algorithms for e-Government* (pp. 23–54). [https://doi.org/10.1007/978-3-031-22408-9\\_2](https://doi.org/10.1007/978-3-031-22408-9_2)
- Arjang, A., Sutrisno, S., Permana, R. M., Kusumastuti, R., & Ausat, A. M. A. (2023). Strategies for Improving the Competitiveness of MSMEs through the Utilisation of Information and Communication Technology. *Al-Buhuts*, 19(1), 462–478.
- Ausat, A. M. A. (2022). Positive Impact of The Covid-19 Pandemic on The World of Education. *Jurnal Pendidikan*, 23(2), 107–117. <https://doi.org/10.33830/JP.V23I2.3048.2022>
- Ausat, A. M. A., Azzaakiyyah, H. K., Permana, R. M., Riady, Y., & Suherlan, S. (2023). The Role of ChatGPT in Enabling MSMEs to Compete in the Digital Age. *Innovative: Journal Of Social Science Research*, 3(2), 622–631. <https://doi.org/https://doi.org/10.31004/innovative.v3i2.346>
- Azizi, M. H., Bakri, S., & Choiriyah, S. (2023). Implementation of Total Quality Management in the Ministry of Religion-Based Education. *Nidhomul Haq : Jurnal Manajemen Pendidikan Islam*, 8(1), 125–136. <https://doi.org/10.31538/ndh.v8i1.3067>
- Cahyono, A. S., Tuhuteru, L., Julina, S., Suherlan, S., & Ausat, A. M. A. (2023). Building a Generation of Qualified Leaders: Leadership Education Strategies in Schools. *Journal on Education*, 5(4), 12974–12979. <https://jonedu.org/index.php/joe/article/view/2289>
- Chen, C.-L., Lin, Y.-C., Chen, W.-H., Chao, C.-F., & Pandia, H. (2021). Role of Government to Enhance Digital Transformation in Small Service Business. *Sustainability*, 13(3), 1028. <https://doi.org/10.3390/su13031028>
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, 24(2), 97–140. <https://doi.org/10.1080/10888691.2018.1537791>
- Dayagbil, F. T., Palompon, D. R., Garcia, L. L., & Olvido, M. M. J. (2021). Teaching and Learning Continuity Amid and Beyond the Pandemic. *Frontiers in Education*, 6, 1–12. <https://doi.org/10.3389/educ.2021.678692>
- Diawati, P., Gadzali, S. S., Abd Aziz, M. K. N., Ausat, A. M. A., & Suherlan, S. (2023). The Role of Information Technology in Improving the Efficiency and Productivity of Human Resources in the Workplace. *Jurnal Teknologi Dan Sistem Informasi Bisnis*, 5(3), 296–302. <https://doi.org/https://doi.org/10.47233/jteksis.v5i3.872>
- Elmi, H., Ambiyar, A., Huda, Y., & Novaliendry, D. (2024). The Role of Information and Communication Technology in Interactive Learning. *Jurnal SAINTIKOM (Jurnal Sains Manajemen Informatika Dan Komputer)*, 23(1), 193. <https://doi.org/10.53513/jis.v23i1.9549>
- Fauzi, F., Tuhuteru, L., Sampe, F., Ausat, A. M. A., & Hatta, H. R. (2023). Analysing the Role of ChatGPT in Improving Student Productivity in Higher Education. *Journal on Education*, 5(4), 14886–14891. <https://doi.org/10.31004/joe.v5i4.2563>

- Gligorea, I., Cioca, M., Oancea, R., Gorski, A.-T., Gorski, H., & Tudorache, P. (2023). Adaptive Learning Using Artificial Intelligence in e-Learning: A Literature Review. *Education Sciences*, 13(12), 1216. <https://doi.org/10.3390/educsci13121216>
- Griffiths, A.-J., Alsip, J., Hart, S. R., Round, R. L., & Brady, J. (2021). Together We Can Do So Much: A Systematic Review and Conceptual Framework of Collaboration in Schools. *Canadian Journal of School Psychology*, 36(1), 59–85. <https://doi.org/10.1177/0829573520915368>
- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3, 275–285. <https://doi.org/10.1016/j.susoc.2022.05.004>
- Harini, H., Wahyuningtyas, D. P., Sutrisno, S., Wanof, M. I., & Ausat, A. M. A. (2023). Marketing Strategy for Early Childhood Education (ECE) Schools in the Digital Age. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 7(3), 2742–2758. <https://doi.org/10.31004/obsesi.v7i3.4454>
- Heriyanto. (2022). Pilkada di masa Pandemi Covid-19 Ditinjau dari Perspektif Administrasi Publik. Prosiding Seminar Nasional Ilmu Ilmu Sosial (SNIIS), 384–391.
- Heriyanto, H. (2022). Role of People's Representative Council in Optimizing Regional Autonomy Based on Administrative Perspective. Proceedings of the 1st International Conference on Social Science and Technology (INCOSST), 1(1), 22–31.
- Heriyanto, H., Oktavianda, M., & Sihombing, G. K. H. (2022). SWOT Analysis in Facing the Quality 2024 Elections at the Regional General Election Commission of Kubu Raya Regency, West Kalimantan. *LEGAL BRIEF*, 11(4), 2268–2275.
- Heriyanto, Debbie Yuari Siallagan, & Sulaiman. (2020). Peran Pemerintah dalam Pengembangan Teluk Berdiri sebagai Objek Ekowisata di Kabupaten Kuburaya Kalimantan Barat. *EDUTOURISM Journal Of Tourism Research*, 2(02), 8–16. <https://doi.org/10.53050/ejtr.v2i02.134>
- Heriyanto, H., Lubis, L. N., & Siallagan, D. Y. (2020). Pengaruh Struktur Organisasi terhadap Kinerja Pegawai pada PT Medco E dan P Indonesia Sumatera Selatan. *Eksos*, 16(2), 133–143. <https://doi.org/10.31573/eksos.v16i2.184>
- Heriyanto, H., Oktavianda, M., & Suprihartini, L. (2022). Complaint Management System Analysis: Online Community Aspiration And Complaint Services. Publik (Jurnal Ilmu Administrasi), 11(2), 224. <https://doi.org/10.31314/pjia.11.2.224-236.2022>
- Heyne, D., Keppens, G. A., & Dvořák, D. (2024). From Attendance Data to Student Support: International Practices for Recording, Reporting, and Using Data on School Attendance and Absence. *ORBIS SCHOLAE*, 16(3), 5–26. <https://doi.org/10.14712/23363177.2023.16>
- Kamalov, F., Santandreu Calonge, D., & Gurrib, I. (2023). New Era of Artificial Intelligence in Education: Towards a Sustainable Multifaceted Revolution. *Sustainability*, 15(16), 12451. <https://doi.org/10.3390/su151612451>
- Karakose, T., & Tülübaş, T. (2023). Digital Leadership and Sustainable School Improvement—A Conceptual Analysis and Implications for Future Research. *Educational Process International Journal*, 12(1), 7–18. <https://doi.org/10.22521/edupij.2023.121.1>
- Karamanoli, E., Tzavaras, P., Stelios, S., Sgantzios, K., & Baratsas, V. (2023). Optimizing Data Governance: Policies and Processes for Data Management in Public Administration and Large Organizations. *Proceedings of The 6th International Conference on Research in Business, Management and Finance*, 87–100. <https://doi.org/10.33422/6th.icrbmf.2023.09.105>

- Kraugusteeliana, Surjati, E., Ausat, A. M. A., Pramono, S. A., & Prabu, H. K. (2022). A Literature Review on the Application of Technology During Covid-19 and Its Relationship to Performance. *International Journal Of Artificial Intelligence Research*, 6(1.2), 1. <https://doi.org/https://doi.org/10.29099/ijair.v6i1.2.765>
- Kurniawan, M. S. (2022). The Role of Information Technology in Improving the Effectiveness of Education Management. *Journal on Education*, 4(4), 1658–1665.
- Liliana Măță. (2022). *Ethical Use of Information Technology in Higher Education* (L. Măță, Ed.). Springer Singapore. <https://doi.org/10.1007/978-981-16-1951-9>
- Maryani, L., Nur, J., Utami, S., Nurnaifah, I. I., & Farida. (2023). Strengthening School Management with Digital Education Technology to Improve the Quality of Educational Output. *Indonesian Journal of Educational Research and Review*, 6(2), 446–465. <https://doi.org/10.23887/ijerr.v6i2.66039>
- Montenegro-Rueda, M., Fernández-Cerero, J., Fernández-Batanero, J. M., & López-Meneses, E. (2023). Impact of the Implementation of ChatGPT in Education: A Systematic Review. *Computers*, 12(8), 153. <https://doi.org/10.3390/computers12080153>
- Musheke, M. M., & Phiri, J. (2021). The Effects of Effective Communication on Organizational Performance Based on the Systems Theory. *Open Journal of Business and Management*, 09(02), 659–671. <https://doi.org/10.4236/ojbm.2021.92034>
- Nicho, M., Fakhry, H., Bataineh, E., & Girija, S. (2024). A Strategic Evaluation of Educational Continuity for Accessibility During Uncertainty in an Educational Practicum. *International Journal of Information and Communication Technology Education*, 20(1), 1–31. <https://doi.org/10.4018/IJICTE.342111>
- Obied Qaralleh, T. J. (2020). Role of School Administration in Providing an Attractive and Safe School Environment to Students under Vision 2030. *Propósitos y Representaciones*, 8(SPE3), 1–15. <https://doi.org/10.20511/pyr2020.v8nSPE3.748>
- Raharjo, I. B., Ausat, A. M. A., Risdwiyanto, A., Gadzali, S. S., & Azzaakiyyah, H. K. (2023). Analysing the Relationship between Entrepreneurship Education, Self-Efficacy, and Entrepreneurial Performance. *Journal on Education*, 5(4), 11566–11574. <https://doi.org/10.31004/joe.v5i4.2106>
- Septianti, R., Wahab, A., Hastuti, R., Purnama, Y., & Ausat, A. M. A. (2023). Re-examining the Impact of Covid-19 on Education. *Jurnal Pendidikan Tambusai*, 7(1), 3934–3940. <https://jptam.org/index.php/jptam/article/view/5872>
- Singh, B. J., Chakraborty, A., & Sehgal, R. (2023). A systematic review of industrial wastewater management: Evaluating challenges and enablers. *Journal of Environmental Management*, 348, 119230. <https://doi.org/10.1016/j.jenvman.2023.119230>
- Sudirjo, F., Ausat, A. M. A., Rijal, S., Riady, Y., & Suherlan, S. (2023). ChatGPT: Improving Communication Efficiency and Business Management of MSMEs in the Digital Age. *Innovative: Journal Of Social Science Research*, 3(2), 643–652. <https://doi.org/https://doi.org/10.31004/innovative.v3i2.347>
- Swan, K., Shen, J., & Hiltz, S. R. (2019). Assessment and collaboration in Online learning. *Online Learning*, 10(1), 45–62. <https://doi.org/10.24059/olj.v10i1.1770>
- Touriano, D., Sutrisno, S., Kuraesin, A. D., Santosa, S., & Ausat, A. M. A. (2023). The Role of Information Technology in Improving the Efficiency and Effectiveness of Talent Management Processes. *Jurnal Minfo Polgan*, 12(2), 539–548. <https://doi.org/https://doi.org/10.33395/jmp.v12i2.12454>
- Zamiri, M., & Esmaeili, A. (2024). Methods and Technologies for Supporting Knowledge Sharing within Learning Communities: A Systematic Literature Review. *Administrative Sciences*, 14(1), 17. <https://doi.org/10.3390/admsci14010017>