



The Effect of RMD Utilization on School Quality: Evidence from Public Vocational Schools in Bandar Lampung

Ella Novriyanti¹, Handoko Handoko², Siti Rahma Sari³, Atik Rusdiani⁴, Sowiyah Sowiyah⁵
^{1,2,3,4,5}Universitas Lampung, Lampung, Indonesia

Corresponding author email: elanovriyanti@gmail.com

Info Article

Received: 29 August 2025

Revised: 22 Sept 2025

Accepted: 19 Oct 2025

Online Version: 30 Oct 2025

Abstract

The quality of vocational education is closely related to the effectiveness of school management and data-based governance. This study examines the effect of RMD, a regional education data management system, on the quality of public vocational schools in Bandar Lampung City. An explanatory quantitative approach with a cross-sectional survey design was employed. Data were collected from 263 teachers selected through proportional random sampling across nine public vocational schools. A Likert-scale questionnaire was used to measure RMD utilization and school quality, and the data were analysed using prerequisite tests and simple linear regression. The results indicate that RMD utilization has a positive and statistically significant effect on education quality. The coefficient of determination shows that RMD explains 46.8% of the variance in school quality. These findings confirm that effective use of data management systems contributes substantially to planning, monitoring, and evaluation processes in vocational schools. Strengthening data utilization practices is therefore essential to support transparency, accountability, and continuous improvement in vocational education.

Keywords: Data-based Management; Education Quality; Information System; RMD Utilization; Vocational School

This is open access article under the [CC-BY](https://creativecommons.org/licenses/by-nc-sa/4.0/) licence



INTRODUCTION

Education plays a strategic role in national development by shaping human capital that is capable of supporting economic growth, social resilience, and global competitiveness. In the context of rapid technological change and increasing labour market demands, education systems are required to produce graduates who are not only academically proficient but also vocationally skilled, innovative, and adaptive to change. High-quality education therefore becomes a fundamental prerequisite for preparing competent and competitive graduates who can respond effectively to the dynamics of globalization and industry needs (Anggraini et al., 2024; Zhao et al., 2024). In Indonesia, this strategic role of education is explicitly affirmed in Law No. 20 of 2003, which positions national education as a means to develop learners' potential in a holistic manner, encompassing knowledge, skills, character, creativity, independence, and civic responsibility. This regulatory foundation

underscores that improving education quality is not merely an institutional concern but a national imperative closely linked to sustainable development and the nation's long-term competitiveness.

Despite its strategic importance, the quality of education remains an unresolved empirical problem, particularly at the school level. School quality cannot be assessed solely through student learning outcomes, but must also be understood in terms of how effectively schools manage educational processes, resources, and institutional governance (Bahri and Mubarak, 2024; Shen and Sun, 2025). Empirical evidence indicates that weaknesses in school management and quality assurance systems continue to constrain educational performance in Indonesia (Riyatno et al., 2024; Yusri and Yendi, 2017). This condition is reflected in the results of the 2022 Programme for International Student Assessment (PISA), which show that Indonesian students' competencies in reading, mathematics, and science remain relatively low when compared internationally, suggesting systemic challenges in ensuring consistent education quality. For vocational education, these quality issues have direct implications for graduate readiness, as insufficiently managed learning processes and weak institutional performance may result in graduates who lack the competencies demanded by the labour market (Mahfud et al., 2020; Sancoko et al., 2025). Consequently, low education quality in vocational schools not only affects individual student outcomes but also limits the contribution of vocational graduates to workforce competitiveness and national economic development (Prasetyo & Salabi, 2023).

The quality of education is closely linked to the effectiveness of school management and governance, as schools' function not only as learning institutions but also as organizations that require systematic planning, implementation, and evaluation. Effective school management enables educational processes to be carried out in a more operational, efficient, and sustainable manner, thereby supporting overall school quality (Anggraeni et al., 2024; Antoro, 2024; Riyatno et al., 2024). Within this context, the school principal plays a central role as the main decision-maker who directs institutional policies, coordinates resources, and ensures that educational programs align with quality standards. However, decision-making in schools increasingly demands accurate and timely information, highlighting the need for data-based management systems. Without reliable data to support planning and evaluation, school leaders may face difficulties in identifying problems, monitoring performance, and improving institutional quality in a measurable and accountable way (Simbolon, 2017; Sucita, 2024; Xie et al., 2025).

Educational management information systems have become an essential instrument for supporting school quality improvement in the context of data-driven governance. Through the systematic collection, processing, and presentation of educational data, information systems enable schools to conduct more accurate planning, continuous monitoring, and objective evaluation of educational performance. The availability of valid and relevant data allows school leaders to identify institutional strengths and weaknesses, track program implementation, and assess the achievement of quality indicators in a measurable manner. Empirical studies indicate that the effective use of management information systems contributes positively to improving the quality of educational services by enhancing transparency, accountability, and the effectiveness of decision-making processes within schools (Hindun et al., 2025; Nurillahwaty, 2022; Rismawati et al., 2024). These findings suggest that data-based management systems are not merely administrative tools, but strategic resources that play a significant role in strengthening school quality assurance mechanisms.

Within the regional governance framework, the Lampung Provincial Government has implemented the *Ruang Menghimpun Data* (RMD) as a policy initiative aimed at strengthening school management through data-based decision-making. RMD functions as an integrated education data system designed to support school quality assurance by providing comprehensive and up-to-date information on key institutional components. The system consolidates data related to educators and educational personnel (PTK), facilities and infrastructure, student achievement, graduation outcomes, character education, and the new student admission process, which collectively reflect core indicators of school quality. From a managerial perspective, RMD serves as a strategic instrument that enables education authorities and school leaders to monitor performance, evaluate progress, and align planning with empirically grounded evidence. By institutionalizing data use within school governance, RMD is intended to enhance transparency, accountability, and consistency in quality

assurance practices across vocational schools in Lampung Province.

Despite its intended role as a strategic quality assurance instrument, empirical conditions indicate that the utilization of the RMD in vocational schools has not yet functioned optimally. Data recorded in the RMD system show that the quality of public vocational schools (SMK) in Bandar Lampung remains relatively low, reflecting persistent weaknesses in school performance indicators. One critical indication of this condition is that many schools have not consistently or comprehensively input and update their institutional development data into the system. As a result, the information available in RMD does not fully represent actual school conditions, limiting its usefulness as a reliable basis for planning, monitoring, and evaluating school quality. The absence of accurate and up-to-date data consequently constrains data-driven decision-making at both the school and policy levels, reducing the effectiveness of quality improvement efforts within vocational education in Bandar Lampung.

Although previous studies have highlighted the importance of management information systems in education and examined factors influencing school quality, much of this literature remains either conceptual in nature or focused on education quality in general contexts (Nurhidayah and Muliansyah, 2023; Narindro et al., 2020; Ogochukwu, 2022; Prayogo, 2025; Supriadi et al., 2025). Existing empirical research has largely discussed information systems as supportive tools for school management or analysed determinants of education quality without specifically addressing the measurable impact of a regionally implemented data system. Consequently, there is still limited quantitative evidence that directly examines the effect of utilizing the RMD on the quality of public vocational schools, particularly at the local or regional level. This gap indicates a lack of empirical clarity regarding whether and to what extent the practical use of RMD contributes to improving school quality outcomes in state vocational schools, thereby justifying the need for a focused quantitative investigation within the context of vocational education in Bandar Lampung.

Based on the identified research gap, this study aims to analyse the effect of RMD utilization on the quality of education in public vocational schools in Bandar Lampung City. By employing a quantitative approach with simple linear regression analysis, this research seeks to provide empirical evidence regarding the extent to which the use of a school data management system contributes to variations in education quality. The findings are expected to offer practical contributions for school principals and education administrators by highlighting the importance of optimizing data utilization for planning, monitoring, and evaluating school performance. In addition, this study provides policy-relevant insights for regional education authorities by supporting the development of data-driven governance frameworks that strengthen transparency, accountability, and quality assurance mechanisms in vocational education.

RESEARCH METHODS

Research Design

This study uses explanatory quantitative research with a cross-sectional survey design because it aims to test theories and analyze relationships between variables through numerical measurements and statistical processing. The research method was designed to determine the level of influence of independent variables on dependent variables through inferential statistical analysis techniques. The main instrument for data collection was a questionnaire with a five-point Likert scale. The research was conducted at public vocational schools in Bandar Lampung City, consisting of nine public schools. The research involved distributing questionnaires, conducting a pilot study, and processing statistical data, with the timing determined according to the needs of the research.

Research Subject

The research population consisted of all 756 vocational school teachers in Bandar Lampung City. The sample was determined using proportional random sampling so that each school received a sample allocation in proportion to the number of teachers. The technique is used to ensure proportional representation of teachers from each vocational school. The sample size was calculated

using the Slovin formula at a 5% margin of error, resulting in 263 respondents. The sample distribution in each school was based on the proportion of teachers, as listed in the calculation results table. In addition, 30 teachers were used as a pilot study sample to test the instruments and were not included in the main research sample.

Research Procedure

The research procedure was carried out in several stages: (1) conducting a preliminary study and developing research instruments, (2) conducting a pilot study with 30 teachers to obtain the validity and reliability of the instruments, (3) revising the instruments based on the results of the pilot study, (4) distributing questionnaires to a main sample of 263 teachers, (5) collecting and coding data, (6) conducting prerequisite tests for analysis, including tests for normality, heteroscedasticity, and linearity, and (7) analyzing data using simple regression.

Instruments, and Data Collection Techniques

Research data were collected using a Likert-scale questionnaire with five response options: strongly agree (SA), agree (A), undecided (U), disagree (D), and strongly disagree (SD). The instrument adopted the RMD questionnaire, which consists of four dimensions: system quality, information quality, use, and user satisfaction, comprising a total of 13 items. The questionnaire was used to measure the variables of RMD and school quality. Prior to data collection, the instrument was calibrated through validity and reliability testing using 30 respondents in a pilot study. Validity was assessed using Product Moment correlation with the criterion of r -count greater than r -table at a significance level of 0.05. Reliability was examined using the Cronbach's Alpha coefficient through SPSS, with the criterion that the reliability coefficient exceeded the minimum acceptable threshold.

Data analysis technique

The data were analyzed in several stages. First, prerequisite tests were conducted, including: (1) normality test using Kolmogorov–Smirnov with a significance value criterion greater than 0.05, (2) a test for heteroscedasticity using the Glejser test and, (3) a test for linearity using the ANOVA table with a significance value criterion of linearity greater than 0.05. After all the pre-requisites were met, simple linear regression was used to test the causal relationship between the independent and dependent variables. Thus, the analysis obtained data on the direct effect of RMD on the quality of education.

RESULTS AND DISCUSSION

Result

The direct effect of RMD on educational quality was tested based on the proposed hypothesis that RMD influences educational quality. The results of the simple linear regression test are presented in Table 1.

Table 1. Results of Simple Linear Regression Analysis of RMD on education quality

Model	Unstandardized Coefficients (B)	t	Sig.
(Constant)	43.105	8.813	.000
RMD Utilization (X)	1.040	15.165	.000

Based on Table 1, the regression analysis shows a constant value of 43.105 and a regression coefficient of 1.040, with a t -value of 15.165 and a significance level of 0.000. Substantively, the constant value of 43.105 indicates that even in the absence of an optimal RMD, schools still maintain a baseline level of education quality derived from existing institutional practices, teacher competence, and routine administrative processes. However, this baseline quality remains limited and does not fully support data-driven school improvement.

The positive regression coefficient of 1.040 demonstrates that improvements in RMD such as the availability of structured data systems, accuracy and accessibility of school data, and effective data utilization are associated with measurable increases in education quality. Empirically, this finding suggests that schools with more developed RMD are better able to support planning, monitoring, and decision-making processes, which in turn contribute to higher educational outcomes.

The t-test results ($t = 15.165$; $p < 0.05$) confirm that the effect of RMD on education quality is statistically significant, indicating that the observed relationship is not due to random variation. Furthermore, the coefficient of determination (R^2), as presented in Table 4.20, indicates the proportion of variance in education quality that can be explained by RMD. This implies that strengthening data collection infrastructure and governance at the school level plays a meaningful empirical role in explaining differences in education quality across schools, although other factors outside the model also contribute to educational outcomes. The result is in line with research conducted by Enes et al. (2024).

To further assess the strength of the relationship between RMD utilization and education quality, the coefficient of determination (R^2) was examined. The results are presented in Table 2.

Table 2. Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.684	.468	.466	9.155

Based on Table 2, the R Square value of 0.468 indicates that RMD utilization explains 46.8% of the variance in education quality. This finding suggests that nearly half of the variation in school quality can be attributed to differences in how effectively schools utilize the RMD system. The remaining 53.2% of variance is influenced by other factors not examined in this study. Based on analysis, the results provide empirical evidence that the utilization of RMD has a significant and positive effect on the quality of education in public vocational schools in Bandar Lampung City.

Discussion

The findings of this study demonstrate that the utilization of RMD has a significant and positive effect on the quality of education in public vocational schools in Bandar Lampung City. The regression analysis indicates that improved use of RMD contributes meaningfully to variations in school quality, explaining 46.8% of the observed variance. This result confirms that data-based management systems play a substantive role in supporting school quality improvement, particularly within the context of vocational education.

The positive regression coefficient suggests that schools which utilize RMD more effectively are better positioned to plan, monitor, and evaluate educational programs in a systematic manner. Through accurate and accessible data, school principals and management teams are able to identify performance gaps, monitor institutional progress, and align school programs with established quality indicators. This finding reinforces the view that education quality is not solely determined by instructional activities, but is also strongly influenced by the effectiveness of school management and governance processes (Riyatno et al., 2024; Meilani, 2023; Yulanda and Saputra, 2025).

These results are consistent with previous studies that highlight the contribution of education management information systems to improving school quality. Hindun et al. (2025) and Sabrina et al. (2024) found that management information systems enhance the quality of educational services by strengthening transparency, accountability, and evidence-based decision-making. Similarly, Rismawati et al. (2024) and Roslindawati et al. (2024) reported that integrated data systems support schools in implementing more effective quality assurance practices. The present study extends these findings by providing quantitative evidence that directly links the utilization of a regional education data system, namely RMD, to measurable improvements in vocational school quality (Awe and Utoware, 2021; Ardiansyah and Trihantoyo, 2023; Mahfud et al., 2020; Sancoko et al., 2025; Suheri, 2025).

In the context of vocational education, the implications of effective RMD utilization are particularly significant. Vocational schools are required to respond to labour market demands by ensuring that graduates possess relevant competencies and practical skills. Data-driven management enables schools to evaluate learning outcomes, monitor graduate absorption, and assess the adequacy of facilities and instructional resources in a more objective manner (Ansori et al., 2024; Narindro et al., 2020; Nurhidayah & Muliansyah, 2023; Ogochukwu, 2022). When RMD is used optimally, schools can align their programs with industry needs more accurately, thereby improving graduate readiness for the world of work (Anwar and Rahman, 2021; Zhao et al., 2024).

The substantial explanatory power of RMD utilization identified in this study also highlights the strategic role of school leaders in ensuring that data systems are not merely administrative tools, but are actively integrated into managerial decision-making (Amirudin et al., 2024; Mariani et al., 2025). Without consistent data input and regular updating, the potential benefits of RMD for quality improvement cannot be fully realized. This finding supports the argument that strengthening data literacy and management capacity among school principals and teachers is essential for sustaining improvements in education quality (Cheng, 2024; Rosana, 2022; Roslindawati et al. 2024; Simbolon, 2017; Sucita, 2024).

CONCLUSION

This study concludes that the utilization of RMD has a significant and positive effect on the quality of education in public vocational schools in Bandar Lampung City. The findings demonstrate that effective use of RMD contributes substantially to school quality improvement, explaining 46.8% of the variance in education quality. This result confirms that data-based management systems are a critical component of school governance, particularly in supporting systematic planning, monitoring, and evaluation processes.

The empirical evidence indicates that vocational schools that utilize RMD more effectively are better able to manage educational resources, monitor institutional performance, and align school programs with established quality indicators. By providing accurate and relevant data, RMD enables school leaders to make informed managerial decisions that enhance transparency, accountability, and overall educational performance. In the context of vocational education, this data-driven approach is essential for ensuring that graduates possess competencies that are responsive to labour market demands.

These findings highlight the importance of optimizing RMD implementation not merely as an administrative requirement, but as a strategic instrument for quality assurance. School principals and education stakeholders need to ensure consistent data input, regular updating, and effective use of RMD information in decision-making processes. Strengthening data literacy and management capacity among school personnel is therefore crucial to maximize the impact of RMD on education quality.

ACKNOWLEDGMENTS

The authors would like to express their deepest gratitude to all individuals and institutions who contributed to the completion of this research. Special thanks are extended to the educational institutions and teachers who participated in the data collection process and provided valuable insights essential to this study. We also acknowledge the support from our academic mentors and colleagues who offered critical feedback and guidance throughout the development of this paper. Their encouragement has greatly enhanced the quality of this research.

REFERENCES

- Amirudin, J., Zaqiah, Q., & Rohimah, E. (2024). Implementation of internal policy head of madrasah in improving the quality of learning. *Kharisma Jurnal Administrasi dan Manajemen Pendidikan*, 3(1), 16-24. <https://doi.org/10.59373/kharisma.v3i1.34>
- Anggraeni, A., Fikri, F., & Utama, D. H. (2024). Efforts to improve readiness to become pre-service teachers through self-efficacy and mastery of educational course material. *Comm-Edu Journal*, 7(2), 2615–1480.
- Anggraini, M. J. (2024). Pengaruh budaya organisasi terhadap mutu pendidikan. *Jurnal Pendidikan dan Pembelajaran*, 6(2).
- Antoro, B. (2024). Analysis of the application of the Slovin formula in scientific research: Strengths, weaknesses, and errors from a statistical perspective. *Journal of Social Humanities*, 1, 53–63. <https://doi.org/10.70585/jmsh.v1i2.38>
- Ansori, A., Maghfirah, T., & Prahesty, T. (2024). Manajemen sumber daya manusia di lembaga pendidikan melalui sistem informasi: Meningkatkan kinerja guru. *Imamah: Jurnal Manajemen Pendidikan Islam*, 2(2), 108–116.
- Anwar, F., & Rahman, H. (2021). Pengaruh digitalisasi terhadap kompetensi profesional guru di era Revolusi Industri 4.0. *Jurnal Pendidikan dan Kebudayaan*.
- Ardiansyah, D., & Trihantoyo, S. (2023). Improving teachers' digital competencies in realizing learning innovations in the era of the Industrial Revolution 4.0. *Journal of Management Inspiration Education*, 10(4), 757–770.
- Awe, B. and Utoware, J. (2021). Quality assurance of vocational education trade/entrepreneurship subjects in public secondary schools in Amuwo Odofin Local Government Area in Lagos State, Nigeria. *JEP*. <https://doi.org/10.7176/jep/12-2-13>
- Bahri, E. and Mubarak, A. (2024). The implementation of progressivism philosophy based on educational entities in Indonesia. *International Journal of Science Education and Cultural Studies*, 3(2), 46-56. <https://doi.org/10.58291/ijsecs.v3i2.263>
- Cheng, E. C. (2025). Strategic use of data in higher education institutions for quality enhancement. In M. Kayyali (Ed.), *Navigating Quality Assurance and Accreditation in Global Higher Education* (pp. 535-562). IGI Global Scientific Publishing. <https://doi.org/10.4018/979-8-3693-6915-9.ch023>
- Enes, U., Asha, L., & Wanto, D. (2024). Optimization of facilities and infrastructure management in improving the quality of learning at madrasah ibtidaiyah. *Kharisma Jurnal Administrasi dan Manajemen Pendidikan*, 3(2), 146-157. <https://doi.org/10.59373/kharisma.v3i2.54>
- Hindun, H., Haryati, T., & Abdullah, G. (2025). The influence of management information systems, transformational leadership, and school-based management on the quality of educational services in elementary schools in Boja District. *Scholaria: Jurnal Pendidikan dan Manajemen*, 7(2), 410–429.
- Mahfud, T., Siswanto, I., Wijayanto, D., & Puspitasari, P. (2020). Antecedent factors of vocational high school students' readiness for selecting careers: A case in Indonesia. *Jurnal Cakrawala Pendidikan*, 39(3), 633-644. <https://doi.org/10.21831/cp.v39i3.32310>
- Mariani, A., Warlizasusi, J., Usman, M., & Harahap, E. (2025). Principal supervision in improving the quality of learning administration services at the state islamic elementary school. *Kharisma Jurnal Administrasi dan Manajemen Pendidikan*, 3(2), 135-148. <https://doi.org/10.59373/kharisma.v3i2.53>
- Meilani, M. (2023). Implementation of school information system management in the use of digital resources. *Eduinsights*, 1(2), 88-96. <https://doi.org/10.58557/eduinsights.v1i2.17>
- Narindro, L., Hardyanto, W., Raharjo, T., & Kardoyo, K. (2020). Development of accountability for academic performance model based on management information system. *Vine Journal of Information and Knowledge Management Systems*, 51(1), 47-63. <https://doi.org/10.1108/vjikms-10-2019-0158>
- Nurhidayah, R. and Muliansyah, D. (2023). Management information systems in private universities and its impact on productivity. *International Journal of Management and Business Economics*, 1(3), 226-230. <https://doi.org/10.58540/ijmebe.v1i3.425>

- Nurillahwaty, E. (2022). Peran teknologi dalam dunia pendidikan. In *Prosiding Seminar Nasional Program Pascasarjana Universitas PGRI Palembang*.
- Ogochukwu, A. (2022). Strategies for effective integration of management information system in secondary schools: Teachers' Perspective from Awka Education Zone in Anambra State. *BIJAMR*, 1(1), 86-92. <https://doi.org/10.54646/bijamr.011>
- Prasetyo, M. and Salabi, A. (2023). School effectiveness: institutional benchmarking for vocational high school management. *Jurnal Penelitian dan Pengembangan Pendidikan*, 7(3), 474-483. <https://doi.org/10.23887/jppp.v7i3.57587>
- Prayogo, D. (2025). Management in vocational schools in the shipping sector: Analysis of the role of leaders as leaders in improving the quality of education and training. *Journal of Education and Training Studies*, 14(2), 19. <https://doi.org/10.11114/jets.v14i2.8060>
- Rismawati, R., Ibrahim, T., & Arifudin, O. (2024). Peran sistem informasi dalam meningkatkan mutu layanan pendidikan. *Jurnal Tahsinia*, 5(7), 1099–1122.
- Riyatno, Y., Kusumaningsih, W., & Soedjono, S. (2024). Pengaruh kepemimpinan transformasional kepala sekolah, profesionalisme guru, dan peran komite sekolah terhadap peningkatan mutu pendidikan. *Jurnal Ilmiah Pendidikan dan Sosial*, 5(2), 485–492.
- Rosana, E. (2022). The role of school operators in data and information system management and service to improve school quality. *Indonesian Journal of Education*, 3(2), 216-225. <https://doi.org/10.54443/injoe.v3i2.27>
- Roslindawati, R., Khairuddin, K., & Ar, M. (2024). Empowering Banda Aceh's productive vocational educators: A principal-driven approach to cultivating industry-ready expertise. *Nidhomul Haq Jurnal Manajemen Pendidikan Islam*, 9(2), 254-269. <https://doi.org/10.31538/ndh.v9i2.4857>
- Sabrina, N., Kusumawaty, M., Buana, A., Welly, W., & Djuniar, L. (2024). Pengaruh sistem pengendalian internal, akuntabilitas, dan kompetensi sumber daya manusia terhadap implementasi good corporate governance. *Balance Jurnal Akuntansi dan Bisnis*, 9(1), 22. <https://doi.org/10.32502/jab.v9i1.8050>
- Shen, H. and Sun, Z. (2025). Share the wisdom of Shanghai's Education Governance. *ITPHSS*, 2(6), 304-314. <https://doi.org/10.70693/itphss.v2i6.948>
- Sancoko, S., Hawadi, L., Yola, L., & Kesa, D. (2025). The effect of behaviour intention on academic performance of vocational students in blended learning: A Case Study in information technology courses. *Jurnal Pendidikan Progresif*, 15(2), 1088-1097. <https://doi.org/10.23960/jpp.v15i2.pp1088-1097>
- Simbolon, R. (2017). *Manajemen sumber daya manusia*. Bumi Aksara.
- Sucita, D. A. (2024). Pengembangan kompetensi guru melalui pendidikan dan pelatihan. *Jurnal Manajemen Pendidikan*, 10(2).
- Suheri, A. (2025). Peran pemerintah dalam peningkatan mutu pendidikan nasional. *Jurnal Kebijakan Pendidikan*, 7(1).
- Supriadi, D., Usman, H., Jabar, A., & Widyastuti, I. (2021). Good school governance: An approach to principal's decision-making quality in Indonesian vocational school. *Research in Educational Administration & Leadership*, 6(4), 796-831. <https://doi.org/10.30828/real/2021.4.2>
- Xie, X., Butdisuwan, S., & Santaveesuk, P. (2025). Factors influencing the leadership of college presidents in the informationization era. *International Journal of Social Sciences and Reviews*, 5(2), 511–522.
- Yulanda, R., & Saputra, D. (2025). Sistem informasi manajemen dalam meningkatkan transparansi dan akuntabilitas sekolah. *Jurnal Administrasi Pendidikan Indonesia*, 5(1).
- Yusri, Y. and Yendi, F. (2017). Pelatihan pemanfaatan program analisis sosiometri dalam pelayanan bimbingan dan konseling bagi konselor. *Jurnal Aplikasi IPTEK Indonesia*, 1(1), 35-45. <https://doi.org/10.24036/4.115>
- Zhao, H., Li, Y., & Chen, Z. (2024). The role of vocational competence in supporting industrial competitiveness. *International Journal of Education Development*, 52(3).