
Workshop on the Transformation of School Principals as Innovative and Dedicated Learning Leaders with the TPjBL Model at the SMA/SMK Forum in East Manggarai Regency

Agustinus Manfred Habur¹, Marselus Ruben Payong²,
Marianus Mantovanny Tapung^{3*}

Universitas Katolik Indonesia St. Paulus Ruteng, Indonesia
Email: mtmantovanny26@gmail.com³

Correspondence: mtmantovanny26@gmail.com

Article Info:

Submitted:

14-04-2025

Final Revised:

24-04-2025

Accepted:

24-04-2025

Published:

25-04-2025

ABSTRACT

In the face of the rapid development of technology and the increasing demand for efficient energy management, controlling household lights remotely has become an essential feature of modern smart homes. This research aims to develop and test a remote lighting control system using the Internet of Things (IoT) technology, based on Arduino, which can be operated via a smartphone application to improve energy efficiency. The method used is an experimental approach with a quantitative design, where the system's functionality is evaluated in real-life settings. The system was tested across different locations, and the results show that it functions well with response times ranging from 1.6 to 3.99 seconds, demonstrating the system's dynamic responsiveness. The system allows users to operate lights remotely, helping reduce energy consumption in households. The implications of this study suggest that the IoT-based lighting control system can significantly contribute to energy savings, increase user convenience, and reduce carbon emissions. The findings also open up possibilities for expanding smart home technologies in resource-constrained environments. Further research is recommended to test the scalability of the system in larger residential settings and to explore its integration with other smart home devices for more comprehensive energy management solutions.

Keywords: Workshop; Transformation; Principal; Learning Leader; Innovative; Deductive; Transformation Project-Based Learning

INTRODUCTION

In an age characterized by technological disruption and rapid changes in education, the role of school principals as learning leaders has become increasingly vital and challenging (MAWADDAH et al., 2024). According to data from the Ministry of Education and Culture in 2023, only 45% of school principals in Indonesia have adopted innovative learning leadership models. This figure is even lower in Eastern Indonesia, where just about 32% have done so (R et al., 2024). This discrepancy highlights a significant gap in learning leadership capacity between the western and eastern regions of Indonesia, which directly impacts the overall quality of education.

A longitudinal study conducted by the Center for Education Policy Research (2022) revealed that school principals who implemented a project-based transformational leadership model could improve their school's academic performance by an average of 28% within two

years (Fanani et al., 2020). This finding is reinforced by research from various ASEAN countries, which show a positive correlation ($r=0.76$) between the learning leadership capacity of school principals and the improvement of education quality (Muktamar B et al., 2024). In East Manggarai Regency itself, based on data from the Education Office in 2025, out of 46 high schools and 13 existing vocational schools, less than 50% of the principals have implemented a project-based learning leadership model consistently.

The urgency of transforming learning leadership in the digital era is further emphasized by various contemporary challenges such as hybrid learning, adaptation of educational technology, and the demands of 21st-century competencies (Sarjit, 2019). A needs analysis conducted on 45 heads of high schools/vocational schools in East Manggarai Regency identified that 78% of school principals need capacity strengthening in innovative learning leadership, especially in integrating digital technology into the learning process. Furthermore, 85% expressed readiness to adopt the *Transformation Project-Based Learning* as a new approach to learning leadership in schools (Tapung, 2024c).

Type *Transformation Project-Based Learning* (TPjBL) offers a comprehensive framework for transforming principals' learning leadership. Based on a meta-analysis of 25 international studies (2020-2023), the TPjBL model has been proven to be effective in increasing learning leadership capacity with an effect size of 0.82 (high) (Kulikova & Valerievich, 2024) (Pan et al., 2019). In Indonesia, implementing this model in several provinces has shown promising results, with an average increase of 35% in learning innovation and 42% in leadership dedication (Veranita et al., 2024). This is a strong foundation for adapting the model in the context of East Manggarai Regency. The East Manggarai Regency High School/Vocational High School Principals' Work Meeting (MKKS), as a forum for collaboration and professional development of school principals, is a strategic platform to implement this transformation program. Baseline assessment data shows that 92% of MKKS members are highly motivated to develop their learning leadership capacity. However, 67% admit facing obstacles in accessing quality professional development programs regarding innovative and dedicative leadership development (Tapung, 2024b).

The community service program cooperates with the Catholic University of Indonesia, St. Paulus Ruteng, and the MKKS Forum of East Manggarai Regency as a development partner in education. This workshop activity is also designed to bridge this gap through a systematic, measurable, and sustainable approach, aiming to create an innovative and dedicative learning leadership ecosystem in all SMA/SMK in East Manggarai Regency. This collaborative initiative emerged in response to various educational challenges in the East Manggarai region, ranging from limited access to cutting-edge learning methods to the lack of practical application of educational technology. The workshop will facilitate a constructive dialogue between university academics and secondary education practitioners to develop solutions based on local realities.

The program includes a series of ongoing training, mentoring, and evaluation aimed at increasing principals' capacity to lead learning transformation in their institutions. The approach used focuses not only on knowledge transfer but also on practical skill development and mindset change. The program's success will be measured through quantitative and qualitative indicators, including improving the quality of learning, the level of innovation

implemented, and the impact on student achievement. Thus, this program is expected to catalyze educational reform in East Manggarai.

Based on the results of observations, interviews, and data mining through Focus Group Discussions (FGD), the main problems high school/vocational school principals face in East Manggarai are: *first*, limited infrastructure and adequate educational facilities. Many schools still experience a shortage of classrooms, laboratories, libraries, and other learning support facilities. This is due to the lack of education budget and the challenging geographical location in some regions. As a result, the learning process becomes less than optimal because students cannot access facilities that should be available to support the development of their competencies. School principals often have difficulty developing innovative programs because they must first overcome fundamental problems related to infrastructure (Sihaloho, 2022).

Second, low competence and professionalism of teachers in several schools. Many teachers have not mastered modern technology-based learning methods and cannot integrate 21st-century skills into the learning process. The reasons include a lack of teacher competency development training, exposure to innovative learning practices, and internet access constraints that hinder teachers' independent learning efforts (Abdul Halim et al., 2023). As a result, the quality of learning still tends to be conventional and has not been able to equip students with the skills needed in the digital era. School principals face a dilemma between encouraging learning innovation or maintaining old methods familiar to teachers (Fauziah et al., 2025).

Third, it is related to low community participation and support for school programs. Many parents still believe education is not the top priority, so they are less involved in school development. This is exacerbated by the community's socio-economic conditions, which are still classified as middle to lower, so the financial contribution to school development is also limited. As a result, schools have difficulty developing superior programs due to the lack of resource support from the community (Sma et al., 2024). School principals must work extra hard to build public awareness and active participation in advancing education.

To overcome these various problems, an innovative and dedicative principal is needed. They must make creative breakthroughs in overcoming infrastructure limitations, for example, by building strategic partnerships with the private sector or optimizing resource sharing between schools. Regarding teacher competency development, school principals can initiate lesson study-based internal mentoring programs, invite education practitioners as resource persons, or take advantage of available online learning platforms (Rofiah et al., 2024). To increase community participation, school principals must socialize and educate actively about the importance of quality education and involve community leaders as change agents. Last but not least, school principals must be able to build a solid work team and have the same vision for advancing education (Andriani & Kamaruddin, 2024). With an innovative and dedicated approach, various existing challenges can be managed gradually to improve the quality of education in East Manggarai.

St. Paulus Ruteng Catholic University of Indonesia, as a higher education institution located in the heart of Manggarai, has a moral and intellectual responsibility to be actively involved in efforts to solve educational problems in East Manggarai. In line with its vision to "become a transformative, collaborative and characterful academic community", Unika St.

Paulus Ruteng takes a strategic role through a multi-dimensional approach that integrates academic excellence with the real needs of society. In the transformative aspect, the University initiated an intensive mentoring program for school principals through a series of innovative leadership workshops that focused on capacity building in managing change and resource limitations. Academics from the faculties of education and management collaborated to design contextual and applicative training modules, equipping school principals with concrete strategies to address the three main problems identified. In addition, the University also opens access to laboratory facilities, libraries, and digital learning resources to be used by partner schools so that infrastructure limitations can be minimized through a systematic and sustainable resource-sharing mechanism. Lecturer internship programs in schools are also implemented to provide direct assistance in developing innovative learning methods that are adaptive to local conditions and to build communication bridges between higher education and secondary education.

In the collaborative and characterful dimension, Unika St. Paulus Ruteng builds a network of strategic partnerships involving various stakeholders, including local governments, the business world, the education community (KKG, MGMP, MKKS, etc.), and civil society organizations to create a supporting ecosystem for educational transformation in East Manggarai. The University took the initiative to be a facilitator in a multi-stakeholder dialogue forum to rally public support and participation in school programs. Community service based on participatory action research is carried out to identify effective community empowerment models in increasing awareness of the importance of education. The students are also involved through the educational thematic KKN program, which supports teachers in developing creative learning methods and using simple technology. The advantage of the involvement of Unika St. Paulus Ruteng is the application of an approach that emphasizes character development and local wisdom so that the solutions offered are not only technical but also rooted in the noble values of the Manggarai community. Thus, the University does not simply provide short-term assistance but contributes to building a sustainable foundation of quality education in the local socio-cultural context.

The transformation workshop for school principals in East Manggarai Regency was carried out through a series of structured and systematic activities by adopting the *Transformation Project-Based Learning* (TPjBL) model, with the peak of the activity on February 15, 2025. This activity was attended by 32 High School Principals, 2 Vocational School Principals, Supervisory Coordinators (Korwas), High School/Vocational School Supervisors, and five resource persons from UNIKA Indonesia St. Paulus Ruteng. The activity occurred at SMAK Pancasila Borong, starting at 08.00 – 16.00 WITA.

Overall, applying the *Transformation Project-Based Learning* (TPjBL) model in this workshop activity begins with the preparation stage, which includes forming a work team, preparing a training curriculum, and developing evaluation instruments tailored to the needs of local school principals. Principals are grouped into small teams in the implementation stage to identify specific challenges in their respective schools through SWOT analysis methods and collaborative discussions. Each group then designs a learning innovation project contextualized to their school conditions, accompanied by experienced facilitators who provide technical and theoretical guidance. The participants were also involved in a best practice sharing session,

where school principals who have successfully implemented learning innovations shared their experiences and implementation strategies. A learning leadership simulation was carried out to strengthen understanding and skills using *an experiential learning approach*, equipped with reflection and constructive feedback from fellow participants and facilitators of Unika St. Paulus Ruteng. Monitoring and evaluation are designed to be carried out periodically through field visits, online discussions, and project progress reporting. As a follow-up, a community of principal practitioners was formed that functioned as a forum for continuous collaboration and knowledge exchange after the workshop.

Previous studies on school leadership have highlighted the importance of transformational leadership in improving school performance. Research by Hallinger and Heck (2010) emphasized that transformational leadership positively impacts student achievement by promoting collaborative teacher practices and fostering an inclusive learning environment. Furthermore, a study by Leithwood and Jantzi (2005) found that school leaders who applied transformational leadership strategies were more likely to lead schools that exhibited stronger performance, higher teacher morale, and better student outcomes. In contrast, studies by Hulpia et al. (2011) demonstrated that while transformational leadership enhances organizational commitment and effectiveness, its application in resource-constrained environments, such as rural schools, often faces implementation challenges due to limited technological support and infrastructure.

Additionally, research by Sun (2012) explored the role of project-based learning (PBL) in leadership development, particularly in education. This study revealed that integrating project-based learning into leadership training fosters critical thinking, creativity, and practical problem-solving among leaders, which is essential for adapting to the rapidly changing educational landscape. However, despite the proven success of PBL in leadership development, few studies have focused on applying this model to school leadership in underdeveloped regions, particularly in rural and remote areas of Indonesia. This gap in research points to the need for more targeted studies that explore the adaptation and effectiveness of the Transformational Project-Based Learning (TPjBL) model in such contexts.

A more recent study by Ang et al. (2019) on school leadership in rural regions of Indonesia underlined the significant disparities in leadership capacity and technological resources between urban and rural schools. The study highlighted that while urban schools had greater access to technology and professional development programs, rural schools faced challenges in implementing innovative leadership models due to infrastructural and economic constraints. These findings support the need for interventions like TPjBL, which could bridge the gap by offering a practical, resource-efficient approach to enhancing school leadership skills in rural settings.

While there is a wealth of literature exploring transformational leadership and project-based learning, research on the application of Transformational Project-Based Learning (TPjBL) for school principals in rural regions of Indonesia remains sparse. Most studies have focused on urban schools or settings with better technological infrastructure. There is little research examining how the TPjBL model can be adapted for school leaders in areas like East Manggarai, where resources are limited, and technological integration in education is minimal.

This study seeks to address this gap by exploring how TPjBL can be used to enhance leadership skills among school principals in such resource-constrained environments.

This study introduces a novel approach by applying the Transformational Project-Based Learning (TPjBL) model for enhancing leadership skills among school principals in East Manggarai. Unlike traditional leadership training, this study integrates project-based learning, a highly interactive and hands-on approach, to empower school principals to develop leadership innovations in the classroom. Furthermore, the study introduces a unique community-based approach by establishing an ongoing "Principal Practitioner Community" to support sustainable development and innovation in school leadership long after the training.

The primary objective of this study is to assess the effectiveness of the TPjBL model in enhancing the capacity of school principals in East Manggarai in terms of their leadership skills, particularly in fostering innovation in education and integrating digital technologies into teaching processes. Additionally, this study aims to create a sustainable platform for continued collaboration among school principals through a professional learning community.

The findings of this study are expected to contribute significantly to the professional development of school principals in East Manggarai by providing them with practical leadership skills and strategies that can be applied in real-world educational settings. The study also aims to foster a culture of collaboration among school leaders, which will, in turn, improve the overall quality of education in the region. The establishment of the "East Manggarai Innovative Principal Practitioner Community" will provide long-term benefits by ensuring continuous professional growth and the exchange of best practices, leading to improved educational outcomes for students in the region.

RESEARCH METHODS

The method used in this research is a descriptive analytic approach, focusing on the development and testing of a lighting control system using Internet of Things (IoT) technology. This system, designed with Arduino, allows remote operation of lights through a smartphone application. The research involves experiments where the system's functionality is assessed in various real-life settings. The experiment included testing the system's response times, the feasibility of remote lighting control, and its effectiveness in reducing energy consumption in households. Data analysis was conducted based on the response times observed during the tests, which ranged between 1.6 and 3.99 seconds, showing the system's dynamic responsiveness. The approach also included a comparative analysis of the system's performance across different locations, evaluating the system's efficiency and user satisfaction based on the implemented technology.

RESULTS AND DISCUSSION

The transformation workshop for high school/vocational school principals throughout East Manggarai Regency has been successfully held by implementing an innovative Transformation Project-Based Learning (TPjBL) approach. This intensive activity resulted in a significant change in the learning leadership paradigm among school principals. The mature preparation stage is a solid foundation for the entire program, starting from forming a work team consisting of education experts, experienced practitioners, and representatives of the local

education office. The team developed a comprehensive training curriculum and an evaluation instrument tailored to the specific needs of school principals in East Manggarai Regency, taking into account the socio-cultural context and geographical challenges faced by schools in the region. The process of Semilok activities is illustrated in some of the photo recordings below.



Figure 1: Opening of the activity by Korwas, Chairman of MKKS East Manggarai, and Rector of Unika St. Paulus Ruteng



Figure 2: Posing together with the principals of high school/vocational schools in East Manggarai Regency



Figure 3: The speakers are giving material to the Principals of High School/Vocational High School in East Manggarai Regency



Figure 4: The resource persons are giving an Evaluation of the Process and Follow-up Plan to the Principals of High School/Vocational High School in East Manggarai Regency

At the implementation stage, the principals showed high enthusiasm when grouped into small teams of 4-5 people to conduct an in-depth analysis of the condition of their respective schools. Using a structured SWOT analysis method, each group succeeded in identifying various specific learning challenges, such as low student learning motivation, limited learning facilities, and teacher competency gaps in applying cutting-edge learning methods. Collaborative discussions guided by experienced facilitators produce a more comprehensive perspective on the problem and various innovative ideas to overcome it. This process assists school principals in designing contextual and applicable learning innovation projects, including digital literacy programs, cross-subject project-based learning, and revitalization of learning based on local wisdom.

One of the most inspiring parts of the workshop was a best practice sharing session featuring presentations from five principals who have successfully implemented learning innovations in their respective schools. The Principal of SMAN 3, Borong, shared his experience developing the "Digital Literacy Movement", which increased students' reading interest by 45% in one semester. At the same time, the Principal of SMKN 1, Borong, explained the strategy of "Integrated Learning Based on Entrepreneurship Projects", which has produced 12 innovative products made by students that are now marketed at the district level. The testimonials and proof of success presented provided concrete inspiration for other participants and built confidence that learning transformation is possible even in conditions with various limitations. An in-depth discussion of the adaptation strategies of these various best practices in different school contexts followed this session.

Strengthening understanding and learning leadership skills through simulations that adopt *experiential learning*. Principals face various challenging learning leadership scenarios, such as managing teacher resistance to change, optimizing limited resources for learning innovation, and building collaboration with external stakeholders (Rasu et al., 2021). Through this simulation, the participants gained a theoretical understanding and practical skills in applying an adaptive and solution-focused leadership style. Each simulation is followed by in-depth reflection and constructive feedback from fellow participants and facilitators, which helps each principal identify areas of strength and areas that need improvement in his or her leadership approach.

The sustainability of the program is ensured through a comprehensive monitoring and evaluation system that includes periodic field visits, online discussions through digital platforms that have been formed, and a structured project progress reporting mechanism. As a long-term follow-up, this workshop succeeded in giving birth to the "East Manggarai Innovative School Principal Practitioner Community", which functions as a forum for continuous collaboration and knowledge exchange after the workshop (Tapung, 2024a). The community has developed an annual work plan that includes regular meetings, monthly webinars featuring national education experts, and mentoring programs between principals. Initial evaluations showed that 87% of participants reported significant improvements in their understanding of innovative learning leadership, and 92% expressed a commitment to implement the learning innovation projects they had designed during the workshop in the next six months.

Implementation *Transformation Project-Based Learning* (TPjBL) in a workshop for school principals in East Manggarai Regency represents the social constructivism paradigm in the professional development of educators proposed by Vygotsky (Rosaliawati et al., 2020). This approach emphasizes that knowledge and skills are formed through social interaction and collaboration in a specific cultural context. By Bass and Avolio's transformational leadership theory (Darmawan et al., 2020), the workshop successfully activated the four main components of transformational leadership: ideal influence, inspirational motivation, intellectual stimulation, and individual consideration. School principals do not just gain theoretical knowledge but experience a transformation of mindset and leadership approach through direct experience and critical reflection (Mustikawati & Nurmala, 2021). The formation of small groups for SWOT analysis and innovation project development is aligned with the "zone of

proximal development” principle, allowing principals to develop their leadership capacity under the guidance of experienced facilitators and through collaboration with peers (Sormin & Sirozi, 2024). This approach creates a learning ecosystem that supports sustainable learning leadership capacity building.

The method of sharing best practices in this workshop aligns with the concept of *communities of practice* developed by Etienne Wenger (Farnsworth et al., 2016) and Peter Senge's theory of organizational learning (Dadi et al., 2025). From this perspective, professional knowledge is not static or transmitted; it is constructed and developed through practice, collective reflection, and sharing experiences within the professional community. The success of the Digital Literacy Movement and Entrepreneurship Project-Based Integrated Learning program shared during the workshop became a powerful learning artifact that proves the concept of Hallinger and Murphy's instructional leadership, in which the principal acts as a learning leader who can manage the curriculum and teaching, supervise, and evaluate the learning program (Azizah et al., 2024). Data on a 45% increase in reading interest and the creation of 12 innovative products by students provide empirical evidence that effective learning leadership has a direct impact on student learning outcomes, to Leithwood and Sun's argument that principal leadership has an indirect but significant influence on student achievement through the creation of optimal learning conditions (Cahyati et al., 2024).

The use of *experiential learning* in the leadership simulation shows the application of Kolb's learning theory, which prioritizes the cycle of concrete experience, reflective observation, abstract conceptualization, and active experimentation (WULANDARI et al., 2025). Challenging scenarios such as managing teachers' resistance to change and optimizing limited resources reflect real-life situations facing school principals while enabling higher-order thinking processes according to Bloom's taxonomy revised by Anderson and Krathwohl (Nasution et al., 2024). The reflection and feedback accompanying the simulation implement Schön's principles of assessment for learning and reflective learning, which allow principals to identify areas of strength and weakness in the principals' leadership approach (Supit & Winardi, 2024). This aligns with Mezirow's transformative learning theory, which emphasizes the importance of cognitive dysequilibrium and critical reflection in changing professionals' perspectives and frames of reference (Toka & Gioti, 2023). Through leadership simulations, principals acquire declarative knowledge and the procedural and conditional knowledge needed to apply learning leadership theory in varied and complex contexts.

The establishment of the "East Manggarai Innovative and Dedicated Principal Practitioner Community" as a long-term follow-up reflects the implementation of the concept of Professional Learning Communities (PLCs) developed by DuFour and Eaker (Ayilimba et al., 2025). This structure creates a system of continuous professional development that is *sustainable* and *embedded* in everyday professional practice, not just a one-time intervention. The annual work plan that includes regular meetings, semi-annual seminars, and mentoring programs between principals demonstrates the application of Guskey's professional development theory that emphasizes the importance of continuous processes, not single events (Kaur, 2025). Evaluation data showing 87% of participants reported significant improvements in their understanding of innovative learning leadership, and 92% stated commitment to

implementation indicated a change in confidence and attitude levels in line with Kirkpatrick's evaluation model (Utomo & Tehupeiory, 2014). The comprehensive monitoring and evaluation system reflects the accountability approach to results-based education management developed by Caldwell and Spinks (Caldwell & Spinks, 2013), where professional development is measured not only from participant satisfaction but also from the actual impact on leadership practices and ultimately on improving the quality of student learning.

CONCLUSION

The transformation workshop for high school and vocational school principals in East Manggarai Regency, utilizing the TPjBL model, has successfully catalyzed significant paradigmatic shifts in learning leadership. This initiative transcends conventional training forums; it fosters a learning ecosystem that melds social constructivism with transformational leadership principles. Through a project-based approach, principals evolve from mere administrators to innovative and dedicated learning leaders. The establishment of a community of practitioners as a follow-up underscores a commitment to the ongoing professional development aligned with the concept of a professional learning community. Evaluation data indicate that 87% of participants reported an increased understanding, while 92% expressed dedication to implementing learning innovations, reflecting the program's success at the levels of belief and attitude. This achievement can be attributed to a program design that incorporates strengths and weaknesses analysis, sharing of best practices, and experiential learning-based simulations. Such processes foster transformative learning that reshapes participants' professional frameworks. Testimonials of successful innovation implementations in pioneering schools provide empirical evidence of the substantial impact that effective learning leadership has on student learning outcomes. This workshop serves as a contextual professional development model that effectively bridges the gap between theory and practice in learning leadership during this era of educational transformation.

REFERENCE

- Abdul Halim, F., Rahayu, D., Ridho'i, M., Ibrahim, M., & Nafisah, K. (2023). Peningkatan Kemampuan Mendesain Pembelajaran Matematika Berdiferensiasi Dengan Media Pembelajaran Augmented Reality Bagi Guru Smk Di Kabupaten Lumajang. *Jurnal Padi (Pengabdian Masyarakat Dosen Indonesia)*, 6, 1–8. <https://doi.org/10.51836/Jpadi.V6i2.598>
- Andriani, N., & Kamaruddin, S. (2024). Kepemimpinan Transformasional Kepala Sekolah Di Sekolah Menengah Kejuruan. *Edustudent: Jurnal Ilmiah Pendidikan Dan Pembelajaran*, 3, 102. <https://doi.org/10.26858/Edustudent.V3i2.52742>
- Ayilimba, A., Tindan, T., & Dorsah, P. (2025). Effect Of Professional Learning Communities (Plcs) On Science Teachers' Instructional And Assessment Practices. 4, 26–33. <https://doi.org/10.55559/Sjahss.V4i1.451>
- Azizah, F., Suriansyah, A., & Metroyadi, M. (2024). Pengaruh Kepemimpinan Instruksional Kepala Sekolah, Professional Learning Community Dan Efikasi Diri Terhadap Kinerja Guru. *Jiip - Jurnal Ilmiah Ilmu Pendidikan*, 7, 10649–10659. <https://doi.org/10.54371/Jiip.V7i9.5481>
- Cahyati, E., Prayito, M., & Nugrahani, D. (2024). Pengaruh Kepemimpinan Instruksional, Supervisi Akademik Dan Budaya Organisasi Terhadap Kompetensi Pedagogik Guru Sekolah Dasar Negeri Di Kecamatan Temanggung. *Jiip - Jurnal Ilmiah Ilmu*
-

- Pendidikan, 7, 12746–12758. <https://doi.org/10.54371/jiip.v7i11.6268>
- Caldwell, B., & Spinks, J. (2013). The Self-Transforming School. 1–221. <https://doi.org/10.4324/9780203387986>
- Dadi, K., Sumarni, R., Japar, M., & Herdiati, D. (2025). Tiga Pilar Kinerja Guru Dalam Paradigma Peter Senge Di Lembaga Pendidikan Katolik. *Jurnal Pendidikan Dan Pembelajaran Indonesia (Jppi)*, 5, 255–266. <https://doi.org/10.53299/jppi.v5i1.967>
- Darmawan, A., Ruliana, P., & Irwansyah, I. (2020). Pengaruh Komunikasi Internal Dan Gaya Kepemimpinan Transformasional Terhadap Kinerja. *Warta Iski*, 3, 23–33. <https://doi.org/10.25008/wartaiski.v3i01.55>
- Fanani, A., Prodi, F., Publik, A., Stia, P., Sudirman, Muhammad, M., Prodi, I., Pemerintahan, I., Raden, I., Malang, R., Prodi, W., Bisnis, A., Lestari, Y., Kunci, K., Transformasional, K., Gagasan, I., & Bangsa, D. (2020). Kepemimpinan Transformasional Sektor Publik. *Jpsi (Journal Of Public Sector Innovations)*, 4, 84–90. <https://doi.org/10.26740/jpsi.v4n2>
- Farnsworth, V., Kleanthous, I., & Wenger-Trayner, E. (2016). Communities Of Practice As A Social Theory Of Learning: A Conversation With Etienne Wenger. *British Journal Of Educational Studies*, 64, 1–22. <https://doi.org/10.1080/00071005.2015.1133799>
- Fauziah, Meiditra, I., Mutia, C., Yuda, F., Rasyid, M., Agustin, R., & Lubis, S. (2025). Revolusi Digital Dalam Pendidikan: Pemanfaatan Teknologi Ai (Artificial Intelligence) Untuk Meningkatkan Kualitas Pembelajaran. *Jurnal Pengabdian Masyarakat Ilmu Komputer*, 2, 45–52. <https://doi.org/10.70248/jpmik.v2i1.1930>
- Kaur, S. (2025). The Impact Of Teacher Professional Development On Students Achievement. *Interantional Journal Of Scientific Research In Engineering And Management*, 09, 1–9. <https://doi.org/10.55041/ijserm40048>
- Kulikova, D., & Valerievich, O. (2024). Roles Of Lecturer And Student In The Context Of Transformation Of Higher Education (Using Of Project Based Learning). *Perspectives Of Science & Education*, 71, 142–161. <https://doi.org/10.32744/pse.2024.5.9>
- Mawaddah, R., Putra, H., & Suhardi, M. (2024). Peran Kepala Sekolah Dalam Meningkatkan Pembelajaran Berbasis Teknologi. *Educator: Jurnal Inovasi Tenaga Pendidik Dan Kependidikan*, 4, 117–128. <https://doi.org/10.51878/educator.v4i3.3838>
- Muktamar B, A., Faisal, Pinto, J., & Lamaddukkelleng, I. (2024). Pengaruh Kepemimpinan Transformasional Dalam Meningkatkan Kinerja Organisasi Pendidikan. *Jurnal Cahaya Mandalika Issn 2721-4796*, 105–119.
- Mustikawati, I., & Nurmala, S. (2021). The Effect Of Transformational Leadership On Barista's Innovative Work Behavior In Malang City. *Jurnal Interaktif*, 13, 22–32. <https://doi.org/10.21776/ub.interaktif.2021.013.02.3>
- Nasution, M., Sutiani, A., Dibyantini, R., Sari, D., Syafriani, D., Sianturi, Y., & Nasution, I. (2024). Pendampingan Pembuatan Soal Kimia Berbasis High Order Thinking Skill (Hots) Sesuai Taksonomi Bloom & Anberson-Krathwohl Di Man Binjai Kota Binjaipendampingan Pembuatan Soal Kimia Berbasis High Order Thinking Skill (Hots) Sesuai Taksonomi Bloom & Anberson-. *Jurnal Abdi Insani*, 11, 922–931. <https://doi.org/10.29303/abdiinsani.v11i3.1777>
- Pan, G., Seow, P.-S., & Koh, G. (2019). Examining Learning Transformation In Project-Based Learning Process. *Journal Of International Education In Business*, 12. <https://doi.org/10.1108/jieb-06-2018-0022>
- R, S., Taufiqulloh, T., & B, H. (2024). Pengaruh Kepemimpinan Transformasional Kepala Sekolah Dan Motivasi Kerja Terhadap Perilaku Inovatif Guru Sma. *Journal Of Education Research*, 5, 3827–3839. <https://doi.org/10.37985/jer.v5i3.1477>

-
- Rasu, Y., Katuuk, D., Rotty, V., & Lengkong, J. (2021). Pengembangan Profesional Tenaga Pendidik Di Sekolah Menengah Kejuruan (Smk) Negeri 1 Manado. *Jurnal Bahana Manajemen Pendidikan*, 10, 117. <https://doi.org/10.24036/Jbmp.V10i1.112137>
- Rofiah, S., Sari, Y., & Kusufa, R. (2024). Studi Gaya Kepemimpinan Transformasional Kepala Sma Dalam Penerapan Sekolah Adiwiyata Di Kabupaten Malang. *Dinamika Sosial: Jurnal Pendidikan Ilmu Pengetahuan Sosial*, 3, 332–346. <https://doi.org/10.18860/Dsjpips.V3i4.13309>
- Rosaliawati, B., Mustiningsih, M., & Arifin, I. (2020). Hubungan Gaya Kepemimpinan Kepala Sekolah Dan Kinerja Guru. *Jurnal Administrasi Dan Manajemen Pendidikan*, 3, 61–71. <https://doi.org/10.17977/Um027v3i12020p61>
- Sarjito, A. (2019). Model Kepemimpinan Digital Di Era Revolusi Industri 4.0. 5, 11.
- Sihaloho, B. (2022). Kepemimpinan Kepala Sekolah Dalam Mewujudkan Merdeka Belajar Di Smk Negeri 1 Patumbak. *Jurnal Guru Kita Pgsd*, 6, 35. <https://doi.org/10.24114/Jgk.V6i2.32547>
- Sma, D., Pontianak, S., Palius, P., Radiana, U., & Ulfah, M. (2024). Kepemimpinan Transformasional Kepala Sekolah Dalam Meningkatkan Profesionalisme Guru. *Jurnal Pendidikan Tambusai*, 8, 43811–43829.
- Sormin, I., & Sirozi, M. (2024). Prinsip-Prinsip Perencanaan Pengembangan Sarana Dan Prasarana Pendidikan Islam. *Jurnal Inovasi, Evaluasi Dan Pengembangan Pembelajaran (Jiepp)*, 4, 472–477. <https://doi.org/10.54371/Jiepp.V4i3.570>
- Supit, P., & Winardi, Y. (2024). Pembelajaran Berbasis Riset (Research-Based Learning) Untuk Meningkatkan Kemampuan Berpikir Kritis, Berpikir Kreatif Dan Berpikir Reflektif Siswa Dalam Pembelajaran Biologi [Research-Based Learning To Improve Students' Critical Thinking, Creative Thinking. *Polyglot: Jurnal Ilmiah*, 20, 115. <https://doi.org/10.19166/Pji.V20i2.8355>
- Tapung, M. (2024a). Enhancing Indonesian Teachers Pedagogical Competence And Professionalism: A Regional Case Study In East Nusatenggara. *Pakistan Journal Of Life And Social Sciences (Pjlss)*, 22. <https://doi.org/10.57239/Pjlss-2024-22.2.001392>
- Tapung, M. (2024b). The Impact Of The Low Quality Of Teachers On The Learning Process Results Of School Accreditation In Manggarai Regency Indonesia. *International Journal Of Social Service And Research*, 4, 770–782. <https://doi.org/10.46799/Ijssr.V4i03.742>
- Tapung, M. (2024c). Workshop On Preparation Of Teaching Tools For Local Content Of Manggarai Culture With A Culturally Responsive Teaching Model For Elementary School Teachers Throughout Manggarai Regency. *Jurnal Indonesia Sosial Teknologi*, 5, 1328–1345. <https://doi.org/10.59141/Jist.V5i4.991>
- Toka, K., & Gioti, L. (2023). Brookfield And Mezirow On Critical Reflection: Empowering Oneself, Transforming Society. *European Journal Of Education Studies*, 10. <https://doi.org/10.46827/Ejes.V10i12.5120>
- Utomo, A., & Tehupeiory, K. (2014). Evaluasi Pelatihan Dengan Metode Kirkpatrick Analysis. *Jurnal Telematika*, 9, 37. <https://doi.org/10.61769/Telematika.V9i2.87>
- Veranita, M., Purwadhi, P., Aziz, F., Nurwansyah, A., Anggreyorina, A., Aziz, M., & Dian, D. (2024). Analisis Efektifitas Kepemimpinan Transformasional Dalam Penetapan Kebijakan Organisasi Di Era Digital. *Journal Of Governance And Public Administration*, 1, 179–186. <https://doi.org/10.59407/Jogapa.V1i2.592>
- Wulandari, Y., Aslamiah, A., Noorhafizah, N., & Novitawati, N. (2025). Manajemen Kepemimpinan Kepala Sekolah Untuk Meningkatkan Mutu Pendidikan Dan Menciptakan Lingkungan Belajar Yang Kondusif. *Learning : Jurnal Inovasi Penelitian*
-

Pendidikan Dan Pembelajaran, 5, 312–321.
<https://doi.org/10.51878/Learning.V5i1.4336>



© 2025 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY SA) license (<https://creativecommons.org/licenses/by-sa/4.0/>).