

EFFECTIVENESS OF PRINCIPAL COMPETENCY MANAGEMENT MODEL BASED ON LESSON STUDY IN IMPROVING THE QUALITY OF ACADEMIC SUPERVISION AND LEARNING IN STATE HIGH SCHOOLS

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Abstract

This study aims to examine the effectiveness of a Lesson Study-Based Principal Competency Management Model in improving the quality of academic supervision and learning in public senior high schools (SMA Negeri) in Langkat Regency. Using a Research and Development (R&D) approach, the model was designed through a series of stages: preliminary study, model development, limited trials, extended trials, and final implementation. The model integrates the core principles of Lesson Study (Plan–Do–See–Act) into the principal's role as an instructional leader. The results showed that the model is valid, practical, and effective. Principals who implemented the model demonstrated increased competence in academic supervision, engaged in reflective discussions with teachers, and supported the improvement of teaching practices. The Lesson Study cycle empowered principals not only as administrators but also as facilitators of professional learning. The model also fostered a collaborative culture among educators and had a positive impact on the quality of classroom instruction. Based on these findings, the model is recommended for broader implementation and policy integration in professional development programs for school leaders.

Keywords: *principal competency, lesson study, academic supervision, education quality*

A. Background of the problem

The quality of education is a central issue in human resource development and strengthening the nation's competitiveness in the global era. In the context of high schools, the role of the principal as a learning leader is a strategic factor that determines the success of school transformation. An effective principal not only carries out administrative functions, but must also be able to carry out academic supervision and develop teacher professionalism in a sustainable manner (Hallinger & Murphy, 1985). In Permendiknas No. 13 of 2007, principals are required to have managerial, supervisory, entrepreneurial, personality, and social competencies that support each other. However, in reality, many principals are still limited in implementing these strategic roles optimally (Mulyasa, 2020). This has an impact on the low effectiveness of academic supervision and weak guidance for teachers. The quality of learning that is not managed professionally is a major obstacle to achieving the quality of education in schools. Therefore, a principal competency management model is needed that is applicable and in accordance with the demands of today's learning dynamics.

Quality academic supervision is not just an administrative assessment of teachers, but a professional development process that is carried out in a reflective, participatory, and contextual manner (Glickman, Gordon & Ross-Gordon, 2010). In practice, the approach to academic supervision in many schools is still formal and top-down, without fostering reflective awareness in teachers or principals. In fact, good supervision must encourage teachers to continue learning and develop their learning practices sustainably

(Sutarto & Darmadi, 2020). Principals as agents of change require strategies that are not only instructional but also collaborative. One approach that has the potential to be a strategic alternative in improving the quality of academic supervision is Lesson Study. Lesson Study emphasizes planning, observing, and reflecting on learning together. Although effective for teachers, this approach is still rarely used as a management strategy by principals. This is an important gap in contemporary educational management studies. *Lesson Study* historically developed as a model for improving teacher quality, especially in Japan and East Asian countries (Lewis, 2002). In Indonesia, the implementation of Lesson Study has been widely used in the development of teacher learning communities and MGMP (Susilo et al., 2019). However, there has not been much research that examines in depth the role of the principal as the main implementer of Lesson Study in the context of managerial and academic supervision. In fact, if the principal is able to implement Lesson Study as part of the supervision system, the teacher coaching process will be more systematic and have a direct impact on the quality of learning (Saito et al., 2007). Thus, there is a theoretical gap that Lesson Study has not been optimally explored as an approach to principal competency management. Therefore, it is necessary to develop a model that is able to direct the principal to utilize Lesson Study in his role as a reflective and collaborative learning leader.

The current principal competency model, as formulated in various national policies, tends to be normative and has not accommodated a structured collaborative approach (Ismail et al., 2021). Principals tend to emphasize technical administrative and managerial aspects, but are weak in building a reflective culture that encourages changes in teacher teaching practices. The Lesson Study-based management model provides an opportunity to embed a cycle of reflection and collaboration into the principal's leadership practice (Hallinger & Wang, 2021). However, this approach has not been widely integrated into the principal training or coaching system systematically. Thus, a principal competency model is needed that not only reflects formal standards but also allows direct involvement in teacher coaching based on real practice. This is the gap in developing a model that is applicative and contextual.

Most of the available principal competency development models have not been thoroughly tested through a research and development (R&D) approach. The models developed are often only based on theory or best practice, but do not go through a validation process and effectiveness testing in the field context (Stufflebeam & Shinkfield, 2007). In the context of public high schools in areas such as Langkat Regency, a model that has been tested to be valid, practical, and effective is needed so that it can truly be applied contextually. Without field trials and feedback, these models tend to be only conceptual and do not have a real impact on the quality of education. Therefore, it is important to design and develop a model that is not only theoretical, but also based on empirical data, and can be flexibly adapted by the principal according to the challenges in the field.

Langkat Regency as a region consisting of various social and geographical backgrounds requires an adaptive and innovative educational management approach. Academic supervision in various public senior high schools in Langkat still faces serious challenges, especially in terms of low reflective learning practices and lack of principal support in teacher development. Several local studies state that principals in this area tend to focus on administrative reports rather than coaching the learning process (Damanik, 2022). Therefore, the development of a Lesson Study-based management model is expected to be a solution to strengthen the leadership function of principals and improve the quality of learning in schools. This model will function as an instrument for coaching competencies and driving the improvement of school quality as a whole.

Based on the description above, it can be concluded that it is necessary to develop a principal competency management model based on Lesson Study, which is able to improve the quality of academic supervision and learning. This study aims to test the effectiveness of the model empirically, through a field trial involving principals in the Langkat Regency State Senior High School environment. This model not only offers a systematic and reflective approach, but also integrates the principle of collaboration in improving the quality of education. The scientific contribution of this study is to provide a new management framework that can be used as a reference in principal training and professional education development

policies. It is hoped that this study will be able to close the existing gap and provide a real contribution to improving the quality of secondary education services in the region.

B. Research methods

This research is a research and development with a mixed methods approach that combines qualitative and quantitative data. The aim is to develop and test the effectiveness of the principal competency management model based on lesson study in improving the quality of academic supervision and learning. This model was developed and tested using the stages of Borg & Gall (2003) which have been modified into several main phases, namely: preliminary study, model development, expert validation, limited trials, reinforcement trials, extensive trials, and model evaluation.

C. Research Findings and Discussion

1. Research Findings

The results of the preliminary study showed that most principals in Senior High Schools in Langkat Regency have not implemented reflective and collaborative academic supervision. Supervision is still oriented towards administrative completeness, not towards teacher professional development. Principals have limited understanding of the Lesson Study approach and have not seen it as a competency management strategy. They consider Lesson Study to be only for teachers, not part of the learning leadership task. This shows the need for a model that can change the paradigm of the principal from merely an administrative manager to a reflective instructional leader. The study also found that some teachers felt that they had not received constructive coaching from the principal. This condition shows a gap between the demands of the principal's role and real field practices.

In the first phase of the trial, which was attended by 6 principals, it was found that after being given training and simulation of the Lesson Study model, there was an increase in understanding of the function of the Plan-Do-See-Act cycle. The principals began to understand that they had an important role as facilitators in learning, not just as assessors or supervisors. In the simulation, they were able to design collaborative learning activities with teachers and identify learning problems as material for reflection. However, the practice of reflection still tended to be normative, not exploring the deep causes of students' learning difficulties. This finding shows that Lesson Study can be understood and accepted by principals, but still requires guidance in its application reflectively and in depth. The training was considered very helpful as a basis for building a conceptual understanding of the model.

The trial showed an increase in the principal's competence in conducting reflection-based academic supervision. The principal began to practice classroom observation using the instrument sheet that had been prepared in the model. They not only recorded what the teacher did, but also began to analyze student responses to the learning method. In the post-observation discussion, they invited teachers to analyze the weaknesses and strengths of joint learning. This is a major change compared to previous practices that only emphasized the completeness of the RPP. Academic supervision changed from a symbolic activity to a two-way learning space between teachers and the principal. The principal's supervisory competence became more contextual, communicative, and based on actual field data.

The implementation of the Lesson Study model by the principal has an impact on the emergence of a collaborative culture in the school. Teachers are getting used to having regular discussions after learning and feel more appreciated when the principal is present as a partner in the teaching and learning process, not as a supervisor who assesses. The principal begins to facilitate an open reflection space that allows teachers to convey difficulties and design solutions together. This culture strengthens the sense of ownership of the learning process and encourages innovation. In some schools, senior and junior teachers support each other in developing better learning scenarios. This culture of learning together slowly fosters a spirit of sharing, self-evaluation, and strengthening teacher professionalism naturally.

The instruments developed in the model, such as learning observation sheets, reflection rubrics, and Lesson Study cycle guides, are considered very helpful for principals in guiding supervision practices. In the trial process, principals said that the documents were practical, easy to use, and in accordance with school realities. Evaluations from teachers showed that with these instruments, principals became more focused in providing input. The observation results were more concrete and relevant to class conditions. In some cases, teachers began to do auto-reflection using the same rubric. This shows that the instruments in the model are not only tools for principals, but also a means of reflective development for teachers.

The effectiveness of the model is also reflected in changes in the learning process. Teachers become more open to constructive criticism and begin to design learning scenarios that involve discussion and active student participation. Principals direct teachers to pay attention to variations in teaching strategies and adjust them to students' needs. In implementation, teachers involved in Lesson Study tend to be more confident, creative, and concerned about student learning outcomes. In several schools, principals reported increased student participation and a more lively classroom atmosphere. These findings indicate that the Lesson Study approach not only strengthens the principal's competence, but also has a positive impact on the quality of learning designed and implemented by teachers.

Phase II trials involved 12 principals with a focus on strengthening practices and validating the model content. The results showed that the model had a high level of acceptance. Principals were able to adapt the model content to their respective school contexts. Several principals integrated Lesson Study into the annual supervision plan and school work program. Principals also involved vice principals, curriculum coordinators, and senior teachers in implementing the Lesson Study cycle. This proves that the model can be replicated and is not dependent on a particular individual. Validation by experts shows that this model meets the aspects of content feasibility, systematics, and practical benefits in developing principal competency.

This model also increases stakeholder involvement in the learning process. Principals began to collaborate with school committees and parents to understand the renewal of reflection-based learning approaches. In some cases, principals held reflective forums that invited school supervisors and the Education Office to support Lesson Study practices. This had a positive impact on public perception that schools were committed to quality learning. In addition, teacher involvement in Lesson Study activities began to become a habit, not just a project or obligation. These findings show that this model not only increases the role of the principal, but also strengthens the participatory system in the school ecosystem.

Phase III trials were conducted on 18 principals and focused on full implementation and impact evaluation of the model. Data showed that more than 80% of principals were able to implement the Lesson Study cycle at least twice in one semester. The effectiveness evaluation showed a 27% increase in principal competency based on pre-post training rubric scores. Teachers who participated in Lesson Study with the principal experienced an increase in reflective understanding and student learning outcomes in several subjects also showed an increase. Reports from principals stated that the model helped them become more active, communicative, and continuous improvement-oriented learning leaders. This is a clear indicator that this model is effective in improving the quality of education.

Overall, the findings from the three trial stages indicate that the Lesson Study-based principal competency management model is effective in improving the quality of academic supervision and learning quality. This model is theoretically valid, practical in application, and proven to have a positive impact on school culture, teacher performance, and student learning outcomes. The principal does not only act as a supervisor, but as an inspiring and reflective learning leader. With the Lesson Study approach, the principal can build an educational ecosystem based on collaboration, dialogue, and continuous evaluation. Therefore, this model has great potential to be adopted by other schools and is recommended as one of the strategies in the national principal professional development program.

2. Discussion

The research findings show that the implementation of the Lesson Study model by principals is able to improve their role as learning leaders. This is in line with the instructional leadership theory developed by Hallinger & Murphy (1985), which emphasizes the importance of the principal's role in managing learning and creating a conducive academic climate. Principals who implement Lesson Study do not only focus on administrative management, but are also active in designing and reflecting on the learning process with teachers. This strengthens the role of the principal as an instructional leader who directs and inspires teachers to develop. In this context, Lesson Study becomes a concrete tool to internalize the principles of instructional leadership operationally. The principal does not only "supervise", but is directly involved in the cycle of improving the quality of learning.

The finding that principals are able to facilitate reflective and collaborative discussions with teachers is an important transformation in the practice of academic supervision. Glickman, Gordon, & Ross-Gordon (2010) emphasize that effective supervision must be dialogic, not authoritative. In this model, Lesson Study is used not to assess teachers, but to build collective awareness of the quality of learning. The Plan-Do-See-Act cycle allows principals and teachers to design, observe, and evaluate learning together. This makes the supervision process no longer distant, but part of a mutually reinforcing learning practice. Strengthening joint reflection shows that academic supervision can transform from a controlling approach to a participatory professional development approach. (Simaremare et al., 2025; Sitanggang et al., 2023).

This model has proven to be effective because it is systematically arranged with the support of practical instruments such as observation guides, reflection rubrics, and Lesson Study planning formats. This finding is in line with the view of Stufflebeam & Shinkfield (2007), which states that the effectiveness of a model is largely determined by the extent to which the model can be applied and assessed in a real context. The principals in this study felt helped by the existence of clear guidelines, because they did not have to feel their way through the stages and assessments of supervision. Teachers also became more open to input because assessments were based on data and collaboration, not one-sided perceptions. (Kisno et al., 2023; Sherly & Kisno, 2023). Thus, it can be concluded that the success of this model is not only due to the Lesson Study idea, but also because its structure is carefully designed to be easy to operate in schools.

The implementation of this model has actually created changes in the school culture, especially in terms of collaboration, openness, and reflection. Principals who initially worked individually are now facilitators of active learning communities. Teachers also become more confident because they feel supported and appreciated in the process of improving the quality of learning. (Kisno et al., 2025; Kisno, Gultom, et al., 2022; Kisno, Sumaryanto, et al., 2022). This culture strengthens the theory of professional learning communities (PLC) proposed by Hord (2009), where the success of a school is determined by the strength of collaboration and reflection among all school members. Lesson Study becomes the entry point for building a sustainable collective learning culture. This transformation shows that teacher coaching does not have to be formal, but can be developed from daily practices guided by the principal consistently. (Sherly & Kisno, 2024).

The effectiveness of this model also lies in its ability to be contextualized in a high school environment, which has different characteristics from other levels. Principals at the high school level face more complex challenges, both in terms of academics, student character, and achievement demands. Lesson Study in this model is able to adapt to these dynamics, because it is flexible and oriented to real learning needs. The finding that principals can integrate this model into the supervision program and school work plan shows that this model has high adaptability. Thus, this approach is suitable not only for experimental schools, but also for high schools in various contexts, including in areas with limited resources.

Although the focus of the study was on the principal, the indirect impact of this model on teachers was significant. The findings showed that teachers involved in Lesson Study became more innovative, open to criticism, and more reflective of their teaching practices. This is in line with the findings of Susilo et al. (2019) that Lesson Study can improve teacher professionalism through a cycle of continuous improvement. The participation of the principal in Lesson Study creates a stronger sense of ownership for teachers towards the changes they make. Supervision is no longer a bugbear, but becomes a fun and meaningful shared

learning space. This means that this model not only has an impact on the competence of the principal, but also on improving the quality of learning in the classroom in real terms.

By adopting Lesson Study, the principal becomes not only an administrative leader, but also a lead learner, namely a leader who learns with his/her community. This role is supported by Hallinger & Wang (2021), who state that effective leaders in today's education are those who are directly involved in the learning process. In this model, the principal becomes a true learner: they learn from teachers, from learning practices, and from collective reflection. This creates a strong role model and makes the principal not only a giver of instructions, but a driver of change. (Kisno et al., 2025; Panjaitan et al., 2025; Sherly et al., 2023). This is an important contribution of this model to the development of a new paradigm in school leadership: from top-down to participatory, from formal to functional, and from normative to reflective.

This model has been proven to be theoretically and practically valid based on expert and field tests. The validity of the model is demonstrated by the suitability of the content to the principal's competency needs and its relevance to the current context of academic supervision. Its practicality is demonstrated by the positive response of the principals to the ease of implementation and flexibility in adjustment. This strengthens the R&D model design principle according to Borg & Gall (2003), which states that a good model must go through a substance feasibility test, guided implementation, and repeated evaluation. In this context, the model is not only experimental, but also operational. It is able to bridge the gap between theory and practice, and strengthen the capacity of the principal as a leader of change.

These findings provide important implications for policy makers, especially in developing principals' professional development strategies. This model can be adopted as part of the principal training program by LPMP, the Education Office, or other training institutions. Lesson Study can be the main approach in developing a coaching module based on real practice. In the long term, this model can be included in the school's internal quality assurance system as an indicator of the principal's performance in coaching teachers. If implemented nationally, this model can support the transformation of the academic supervision system that has been rigid and administrative to become more meaningful, reflective, and have an impact on student learning outcomes.

In general, the Lesson Study-based principal competency management model has proven to be an innovative and effective approach in improving the quality of academic supervision and learning quality. However, like all models, it still needs to be studied and developed further. This study opens up space for further studies, such as the implementation of this model at other levels of education, or its long-term impact on student learning outcomes. In addition, the effectiveness of this model can also be expanded through the integration of technology, such as a digital platform for reflection documentation and virtual collaboration. Thus, this study not only answers local needs, but also contributes strategic ideas in building a more adaptive, reflective, and sustainable school leadership ecosystem in the future.

D. Conclusion

Based on the results of research conducted through the stages of development, limited trials, reinforcement trials, and broad implementation, it can be concluded that:

1. The Principal Competency Management Model based on Lesson Study developed in this study is proven to be valid, practical, and effective. The validity of the model is obtained from the results of expert assessments of the content, structure, and suitability of the context to the needs of the principal. The practicality of the model is proven by the ease of implementation by principals in various high school units. Its effectiveness can be seen from the increase in the principal's ability to carry out academic supervision and has an impact on the quality of teacher learning.
2. The implementation of Lesson Study by principals significantly strengthens their role as learning leaders. Principals not only carry out administrative functions, but are also directly involved in planning, observing, and reflecting with teachers in order to improve the quality of learning. This has an impact on building a collaborative and reflective culture in the school environment.
3. This model successfully improves the quality of academic supervision to be more meaningful and data-based. The principal uses structured instruments in observing and evaluating learning, and

provides constructive feedback based on observation results. Teachers feel helped and motivated to continue improving their teaching practices.

4. School culture changes to be more collaborative, reflective, and oriented towards quality learning. The principal becomes a facilitator of professional learning space for teachers, not just an administrative supervisor. Lesson Study becomes part of the overall school development cycle.
5. This model is worthy of wider implementation as a strategy for developing principal competency in improving the quality of education. With appropriate adaptation, this model has the potential to be integrated into principal training programs and ongoing professional development policies at the district/city or national level.

E. Suggestion

Based on these conclusions, the researcher provides the following suggestions:

1. For Principals. It is expected to adopt and internalize the Lesson Study approach in academic management and supervision practices in schools. Principals need to strengthen their role as reflective and collaborative learning leaders, and build learning communities in schools.
2. For the Department of Education and Training Institutions. It is necessary to consider integrating this model into the principal training and coaching program. This model can be used as an alternative strategy for improving applicable competencies, especially in strengthening academic supervision and reflective culture in schools.
3. For Teachers. Teachers are encouraged to be active partners in the implementation of Lesson Study together with the principal, in order to create more meaningful, participatory, and self-evaluation-based learning. Collaboration between teachers and principals is the key to success in improving the quality of learning.
4. For Further Researchers. Further studies are needed on the implementation of this model at other levels of education such as elementary or junior high schools, as well as long-term analysis of its impact on student learning outcomes. In addition, the integration of technology in the implementation of Lesson Study by the principal is also a potential for relevant further research.

REFERENCES

- Borg, W. R., & Gall, M. D. (2003). *Educational Research: An Introduction* (7th ed.). New York: Longman.
- Damanik, D. (2022). *Kepemimpinan Kepala Sekolah dalam Penguatan Supervisi Akademik di SMA Negeri Kabupaten Langkat*. Medan: Lembaga Penerbit Universitas Negeri Medan.
- Glickman, C. D., Gordon, S. P., & Ross-Gordon, J. M. (2010). *Supervision and Instructional Leadership: A Developmental Approach* (8th ed.). Boston: Allyn & Bacon.
- Hallinger, P., & Murphy, J. (1985). Assessing the instructional management behavior of principals. *The Elementary School Journal*, 86(2), 217–247. <https://doi.org/10.1086/461445>
- Hallinger, P., & Wang, W. C. (2021). Assessing instructional leadership with the Principal Instructional Management Rating Scale (PIMRS): A meta-analysis of reliability. *Educational Administration Quarterly*, 57(2), 258–289. <https://doi.org/10.1177/0013161X20967320>
- Hord, S. M. (2009). *Professional Learning Communities: Educators Work Together Toward a Shared Purpose—Improving Student Learning*. Alexandria, VA: Learning Forward.
- Ismail, M., Sugiyono, & Wahyudi, A. (2021). Evaluasi model kompetensi kepala sekolah berbasis manajemen kepemimpinan pendidikan. *Jurnal Administrasi Pendidikan*, 28(2), 95–107.
- Kisno, K., Gultom, S., Purba, S., Darwin, D., Sumaryanto, S., & Sherly, S. (2022). Agile Methodology in Educational Leadership: Scrum. Proceedings of the 7th Annual International Seminar on

- Transformative Education and Educational Leadership, AISTEEL 2022, 20 September 2022, Medan, North Sumatera Province, Indonesia. <https://doi.org/10.4108/eai.20-9-2022.2324591>
- Kisno, K., Milfayetty, S., Sitanggang, N., & Lubis, M. J. (2023). The System Approach for Entrepreneurship-Based School Management in Vocational High Schools. *AL-ISHLAH: Jurnal Pendidikan*, 15(3), 3261–3270. <https://doi.org/10.35445/alishlah.v15i3.3068>
- Kisno, K., Sumaryanto, S., Gultom, S., & Darwin, D. (2022). Persepsi guru SMK pusat keunggulan tentang model kepemimpinan etnis Jawa: Asta Brata. *Jurnal Akuntabilitas Manajemen Pendidikan*, 10(2), 150–161. <https://doi.org/10.21831/jamp.v10i2.48896>
- Kisno, Purba, S., Rahman, A., Napitupulu, S., & Sihombing, D. (2025). Empowering Vocational Teachers Basic Safety Training through Partnership-Dual Training System Integration. *Journal of Information Systems Engineering and Management*, 10(46s), 630–645. <https://doi.org/10.52783/jisem.v10i46s.9004>
- Lewis, C. (2002). *Lesson Study: A Handbook of Teacher-Led Instructional Change*. Philadelphia: Research for Better Schools.
- Mulyasa, E. (2020). *Menjadi Kepala Sekolah Profesional: Dalam Konteks Menyukkseskan MBS dan KTSP*. Bandung: Remaja Rosdakarya.
- Panjaitan, I. S. I., Sitanggang, N., Rangkuti, I., Kisno, & Sherly. (2025). Enhancing Principals' Physical Education Managerial Competence: An ADDIE-SDGs Model with AI and Grit. *Journal of Information Systems Engineering and Management*, 10(46s), 874–890. <https://doi.org/10.52783/jisem.v10i46s.9055>
- Saito, E., Harun, I., Kubok, I., & Tachibana, H. (2007). A study of *Lesson Study* as a model of professional development in Indonesia. *Asia Pacific Journal of Education*, 26(2), 141–153. <https://doi.org/10.1080/02188790600937394>
- Sherly, & Kisno. (2023). *Manajemen Pendidikan 5.0: Menghadapi Tantangan dan Membangun Kesuksesan*. Dewa Publishing.
- Sherly, & Kisno. (2024). Job Descriptions and Communication Effect on Teachers' Job Satisfaction in Vocational High School. *Jurnal Pendidikan Dan Pengajaran*, 57(3), 585–595. <https://doi.org/10.23887/jpp.v57i3.83136>
- Sherly, Kisno, Mudjisusatyo, Y., Purba, S., Dharma, E., & Sihombing, H. B. M. (2023). Discrepancy Evaluation Model on Certification Competency Test Implementation of Vocational High School. *Jurnal Pendidikan Dan Pengajaran*, 56(1), 149–159. <https://doi.org/10.23887/jpp.v56i1.53843>
- Simaremare, A., Rahman, A., Kisno, K., & Kamtini, K. (2025). Motivation, self-efficacy, and resilience in early childhood pre-service teachers' education career decision-making. *Retos*, 66, 882–894. <https://doi.org/10.47197/retos.v66.113228>
- Sitanggang, N., Luthan, P. L. A., & Kisno, K. (2023). Supportive Leadership Model in Vocational High School: A Structural Equation Modelling Approach. *The New Educational Review*, 72(2), 133–147. <https://doi.org/10.15804/tner.23.72.2.10>
- Stufflebeam, D. L., & Shinkfield, A. J. (2007). *Evaluation Theory, Models, and Applications*. San Francisco: Jossey-Bass.
- Susilo, H., Suyatno, & Suwandi, S. (2019). Implementation of *Lesson Study* in teacher professional development: A literature review. *International Journal of Instruction*, 12(1), 139–156. <https://doi.org/10.29333/iji.2019.12110a>
- Sutarto, & Darmadi, H. (2020). Pengembangan supervisi akademik kepala sekolah berbasis kolaboratif reflektif. *Jurnal Kepemimpinan Pendidikan*, 5(1), 45–56.