

Sustainable School Leadership Development as a Learning Organization

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ABSTRACT

Keywords:

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This study aims to design a school model as a learning organization that supports the realization of long-term quality education through sustainability-oriented leadership. The method used is Research and Development (R&D) adapted from the Borg & Gall model. The research steps include a preliminary study through needs analysis and literature review, designing a conceptual model, validation by experts, and limited trials in the school environment. The results show that visionary, collaborative, and reflective leadership play a crucial role in building an adaptive and sustainable learning organizational culture. The developed model consists of components of strategic leadership, collective learning, change management, and continuous evaluation. This model is considered feasible and relevant for implementation in efforts to realize quality and sustainable education. These findings provide theoretical and practical contributions to the development of educational leadership systems in an era of dynamic change.

INTRODUCTION

Education is a key pillar in building a nation's civilization. In the context of 21st-century global dynamics, the education sector is required to focus not only on improving the quality of short-term learning but also on developing a sustainable education system. Quality and sustainable education focuses not only on academic achievement but also encompasses the management of internal school processes, strengthening organizational culture, and fostering leadership that supports lifelong learning for all school elements. Therefore, educational development efforts need to be directed at comprehensive transformation, encompassing structural, cultural, and pedagogical aspects, to create an educational ecosystem that is responsive, inclusive, and adaptable to change (Suci Mutia Rahayu, 2024). Strengthening educator competency, active involvement of the school community, and the appropriate use of information and communication technology are strategic factors in ensuring the sustainability of educational quality. Thus, education serves not only as a means of developing individual potential but also as a primary driver in driving social progress and sustainable national development (Hastuti & Utomo, 2022).

Schools as formal educational institutions have a strategic role in preparing future generations who are adaptive to change. In this context, schools not only function as places where the teaching and learning process takes place, but must also be developed as learning organizations that are able to adapt, innovate and develop sustainably. To make this happen, sustainable school leadership is needed, namely leadership that is able to build a shared vision, foster a collaborative culture, and mobilize all school members to be actively involved in the process of improving the quality of education.

School principals as agents of change have an important role in creating a learning system that is reflective, innovative and participatory in order to answer the challenges of current developments (Tumlovskaja, 2022). Thus, sustainable school leadership development is a key aspect in building schools as learning organizations that are adaptive, inclusive, and oriented towards continuously improving the quality of education (Desai et al., 2024).

Leadership in education is no longer sufficient to focus solely on administrative and managerial aspects. Transformational and strategic leadership is required, capable of formulating a shared vision, creating an atmosphere conducive to innovation, and sustainably enhancing the capacity of teachers and staff. This type of leadership is crucial in building a learning organizational culture that ensures the continued quality of education. An educational leader must be able to initiate and facilitate the active participation of all school components in collective learning processes and decision-making based on critical reflection. Furthermore, effective leadership also requires the ability to systematically manage change and optimize cross-functional collaboration within the educational institution to achieve comprehensive educational goals (Pazoki et al., 2022) Visionary leadership that adapts to the internal and external dynamics of the school will strengthen a shared commitment to improving the quality of learning while creating an inclusive and sustainable educational environment. Therefore, educational leadership plays a central role not only in operational aspects but also in encouraging innovation and continuous learning that can effectively respond to the challenges of modern development (Timbi-Sisalima et al., 2022).

Sustainability in education does not only mean maintaining quality, but also includes the school's ability to adapt and develop in the face of social, technological and environmental changes. In the context of sustainable school leadership development as a learning organization, sustainability is operationalized through three main indicators, namely academic, managerial and cultural. Academically, this is demonstrated through improving the quality of learning and curriculum innovation; managerially, through leadership that is able to build a flexible but directed system; and culturally, through the creation of a collaborative and reflective environment throughout the school community (Díez González et al., 2024). Applying a learning organization approach is an important strategy in ensuring the process of reflection, collaboration and innovation runs continuously. Thus, sustainable school leadership plays a vital role in strengthening institutional resilience, maintaining the relevance of education, and fostering a learning culture that supports the overall development of student competencies (Gustriani, Amri et al., 2024).

However, in practice, many schools in Indonesia still face various obstacles in developing themselves as learning organizations. Based on the Indonesian Education Report Card (Ministry of Education, Culture, Research and Technology, 2023), there are still significant gaps in the quality of learning between regions, a low culture of reflection among educators, and a weak internal school collaboration system. These obstacles are strengthened by the findings of the Center for Assessment and Learning

(Pusmendik, 2022) which show that the majority of schools have not been able to implement sustainable learning principles consistently due to the limited managerial capacity of school principals and the lack of evidence-based policy support. In addition, the National Learning Recovery Program report (Kemendikbudristek, 2024) reveals that there is still the impact of post-pandemic learning loss as well as gaps in the implementation of the independent curriculum which requires adaptive and collaborative leadership skills. This condition emphasizes the importance of developing a sustainable school leadership model that not only strengthens academic and managerial aspects, but also builds a reflective and participatory culture in the school environment (Kemendikbudristek, 2024; Pusmendik, 2022).

Rigid bureaucratic structures, a work culture that tends to be individualistic, leadership that lacks vision, and a lack of evaluation systems that encourage continuous improvement are the main challenges. Therefore, a systematic effort is needed to design and implement a model of schools as learning organizations based on leadership with a sustainability orientation (Lawal et al., 2024). The approach implemented must be comprehensive, encompassing organizational restructuring to be more adaptive, developing a collaborative culture that supports collective learning, and enhancing leadership capacity to strategically lead change processes. Furthermore, strengthening ongoing evaluation and monitoring mechanisms is crucial to ensure a responsive improvement process to both internal and external school dynamics. Therefore, implementing a learning organization model that emphasizes sustainable leadership can be an effective solution to address various obstacles while comprehensively and sustainably improving the quality of education in Indonesia (Yuan et al., 2024).

This research was conducted in response to existing needs with the aim of designing a school model as a learning organization that supports the sustainability of quality education through strategic leadership roles. To achieve this goal, this study adopted a Research and Development (R&D) method that allows researchers not only to understand the phenomena that occur, but also to develop practical solutions that can be directly applied in the school context. The R&D approach is implemented through systematic stages, starting from identifying needs, designing the model, validating it through trials, and refining it based on feedback from implementation in the field (Shen, 2023). Thus, this research contributes both theoretically to the development of the concept of a learning organization based on sustainable leadership, and practically by producing a product that is applicable and relevant for continuously improving the quality of education in schools. Furthermore, the involvement of various stakeholders in the development process of this model is expected to strengthen its legitimacy and support the successful implementation of the model in everyday educational practice (Ghayebzadeh et al., 2024).

The research and development (R&D) method provides a systematic framework for designing, testing, and refining a formulated conceptual model. The research stages include a preliminary study to identify needs and problems in the field, designing an initial model based on a literature review and field findings, validating the model by

experts, and conducting limited trials to measure the model's effectiveness and relevance in a real-world context. This approach allows for the creation of a model that is not only theoretical but also applicable and context-appropriate (Mariska & Mustakim, 2024). Furthermore, through an iterative cycle of development and evaluation, the R&D method integrates input from various stakeholders, making the resulting model more responsive to the specific dynamics and needs of the field. Thus, the application of the R&D method not only strengthens the scientific validity of the developed model but also increases the potential for successful implementation and adaptation of the model in educational contexts that are constantly evolving and complex (Luo, 2024).

This research seeks to make a significant contribution to expanding the literature and practice of educational management in Indonesia, particularly in developing educational leadership models that are appropriate to the local context and characteristics. By designing a model of schools as learning organizations, this research not only presents a robust conceptual framework but also provides practical guidance that can be used by principals, teachers, and all educational stakeholders to build an adaptive and sustainable learning culture (Afzal Tajik et al., 2022). Furthermore, this model is expected to encourage the transformation of school organizations toward learning environments that are responsive to the dynamics of changing times and the needs of students. Therefore, this research has the potential to serve as a strategic basis for improving the quality of effective and sustainable school leadership and management in facing today's educational challenges (Adriman et al., 2024).

The results of this study are expected to not only provide direct benefits to the schools targeted by the study but also have the potential to be adapted and further developed by other educational institutions with similar characteristics. Through the application of a systematic, empirically data-driven approach, this study aims to produce a model capable of driving sustainable improvements in educational quality through the implementation of effective and efficient leadership practices (Warsame, 2023). Furthermore, the developed model is expected to serve as a strategic reference in school management, strengthening leadership capacity, and comprehensively improving the quality of the learning environment. Thus, this research not only provides practical contributions to the educational institutions concerned but also enriches academic discourse and educational policy in efforts to achieve the goals of sustainable national education development (Habasisa Molise, 2024).

Thus, this study confirms that leadership is a key element in the process of transforming schools into sustainable learning organizations. Given the increasingly rapid dynamics of change in the modern era, educational institutions are required not only to be able to learn from previous experiences but also to adapt flexibly to changes in both internal and external environments (Fauziyyah et al., 2024). Furthermore, a commitment to long-term improvement in the quality of education is a crucial factor in ensuring sustainability. The leadership model developed through this research is expected to be a strategic solution that supports schools in implementing collective learning, continuous

innovation, and effective change management. Therefore, this model not only provides a theoretical contribution but also serves as a relevant practical guide to address the complex challenges of contemporary education while supporting the achievement of sustainable national education development goals (Kalam et al., 2024).

METHOD

This research uses a Research and Development (R&D) approach with the aim of designing, developing and testing a sustainable school leadership model as a learning organization. This approach was chosen because it is able to produce an applicable conceptual model through systematic stages starting from identifying needs, designing, expert validation, to testing and revision based on field findings. Compared with design-based or mixed methods approaches, R&D is considered more appropriate because it not only integrates theoretical and empirical elements, but also produces concrete research products that can be implemented to improve leadership effectiveness and learning organizational culture in schools. Thus, the R&D method provides a scientific and practical basis for developing leadership models that are sustainable, adaptive, and relevant to the needs of the modern world of education (Makinde et al., 2024).

The Research and Development (R&D) approach used in this study is based on a model adapted from Borg and Gall (1983), which includes several main stages ranging from preliminary studies, model design, validation, trials, to model revision and refinement. However, considering the limitations of time and available resources, the focus of this study is limited to the initial stages, namely design, validation, and limited trials, with the aim of producing a model that is ready for wider application. This approach is expected to provide a solid foundation for the gradual development of the model, while ensuring that the developed model has high quality and relevance before being implemented widely in real educational contexts. Thus, this study maintains a balance between conceptual aspects and practical applications, while optimizing the use of resources in the process of developing a school model as a sustainable learning organization (Jennings et al., 2023).

The initial stage of the research "Sustainable School Leadership Development as a Learning Organization" began with a preliminary study and needs analysis carried out in five secondary schools with different characteristics, including public and private schools in urban and rural areas. Data collection was carried out over four weeks through in-depth interviews with five school principals, ten teachers and five administrative staff, as well as direct observation of leadership activities and learning organizational culture in the school environment. In addition, documentation studies were carried out on school vision and mission documents, annual work plans and learning evaluation reports to strengthen field findings. The data obtained was analyzed descriptively qualitatively to identify actual challenges and needs related to aspects of leadership, collaborative culture and dimensions of educational sustainability. Based on the results of this analysis, the researcher designed an initial model in the form of a draft conceptual model of sustainable school leadership, which

was then validated through expert discussions with three education experts and two experienced school principals. After validation, a limited trial of the model was carried out in one school for four weeks to observe the effectiveness and feasibility of its implementation. This gradual approach ensures that the model developed is not only conceptually strong, but also empirically relevant and able to provide practical solutions for strengthening school leadership in realizing sustainable learning organizations (Moslimany et al., 2024).

After conducting an in-depth analysis of the existing context and needs, the next step was to design a model of a school as a learning organization focused on leadership that supports educational sustainability. This model was developed through the integration of educational leadership theory, the concept of learning organizations, and sustainability principles relevant to the current context. The design process was carried out conceptually by mapping and formulating the key components that form the basis of the model, including visionary strategic leadership, the development of an inclusive collective learning culture, effective change management, and the systematic implementation of ongoing evaluation mechanisms. This approach aims to ensure that the resulting model is not only theoretical but also comprehensive and applicable, thus being able to address the various challenges of contemporary education while strengthening the school's capacity as an adaptive and sustainable learning organization (Mesfin, 2023).

Next, the developed model underwent a validation process involving experts and educational practitioners through Focus Group Discussions (FGDs) and in-depth interviews. This validation stage aimed to obtain constructive feedback, criticism, and in-depth suggestions to ensure that the resulting model was highly relevant, applicable, and aligned with the real conditions and needs of the school environment. The validators in this process included academics with theoretical expertise, principals with extensive experience in educational management, and policymakers with strategic perspectives in the field of education. Thus, this validation process was expected to strengthen the quality and reliability of the model before its widespread implementation, while also ensuring its suitability to the dynamics and challenges of today's education (Murwanashyaka et al., 2024).

After the validation process is complete, the next stage is to conduct a limited trial of the designed model in one or two schools selected as research locations. This trial aims to directly observe the model's implementation, identify obstacles and successes encountered during implementation, and evaluate the model's initial impact on strengthening the organizational learning culture and improving the quality of leadership in the schools. At this stage, data collection is conducted comprehensively using participatory observation methods, in-depth interviews with principals and teachers, and questionnaires distributed to school staff to obtain a comprehensive picture of the model's effectiveness in the context of real-world practice. This approach is expected to generate valid and informative feedback as a basis for evaluating and refining the model before its widespread implementation (George & Onyango, 2024).

The results of the pilot test were then comprehensively analyzed to identify aspects that needed improvement or further development to enhance the model's effectiveness. This analysis combined qualitative and quantitative approaches, with qualitative data used to gain a deeper understanding of the implementation context and participants' experiences during the model's implementation, while quantitative data was used to measure significant changes in attitudes, perceptions, and leadership performance and the learning organization's culture. This combined approach enabled a thorough and objective evaluation of the tested model, allowing the analysis results to serve as a strong foundation for revising and refining the model to make it more relevant, adaptive, and applicable to the ever-evolving educational context (Timotheou et al., 2023).

The model revision process was conducted based on evaluation of the trial results and constructive feedback obtained directly from educational practitioners as users in the field. These improvements focused on improving the model's suitability to the actual needs faced by schools and ensuring ease of sustainable implementation across various educational contexts. Thus, the revised model not only addresses weaknesses identified during the trial but also integrates best practices and field experiences, making it more applicable and adaptive. The final product of this research was then compiled into a comprehensive practical guide, which can be adopted by other schools seeking to develop themselves as learning organizations with sustainability-oriented leadership, thus making a significant contribution to improving the quality and effectiveness of overall education management (Mentang et al., 2024).

To ensure the validity and reliability of the research, researchers used data triangulation techniques by combining various sources of information and diverse data collection methods, thus producing a more comprehensive understanding while minimizing the possibility of bias. Furthermore, the participation of various parties, such as academics, practitioners, and educational stakeholders in the validation and testing process of the model, also strengthened the credibility and validity of the developed model. The entire research process was systematically and in detail documented as an essential part of the research report, which not only supports transparency and accountability but also facilitates evaluation and replication of the research in the future. This approach is expected to ensure that the research results have high scientific quality and significant practical relevance in the context of developing learning organizations and sustainable educational leadership (Han & Wang, 2021).

Overall, the Research and Development (R&D) approach applied in this study not only produces a theoretically robust conceptual model but also creates a practical product ready for application in real-world school contexts. This approach allows for synergy between theoretical and applied dimensions, so that the developed model has a high level of relevance and can be implemented effectively in educational practice. This model is expected to make a significant contribution to improving the quality of education by strengthening effective leadership and developing a sustainable learning

organizational culture. Thus, this research plays a role in supporting the achievement of sustainable quality education in the long term and serves as a strategic foundation for developing school management and educational policies that are responsive to the dynamics of changing times (Hakim et al., 2024).

RESULTS AND DISCUSSION

The following are the results of several stages of research, including preliminary studies, initial model design, expert validation, and limited trials. These results are summarized in the following table:

Table 1. Summary of Research and Development Results

No	Research Stages	Activity	Key Findings	Implications
1	Preliminary Study	Interviews with the principal, teachers, and staff	The school does not yet have a collective learning culture; leadership is still administrative in nature.	A model is needed that encourages collaboration, reflection and innovation.
2	Literature Study	A study of the concepts of leadership, learning organizations, and sustainability	4 key components were found: Strategic leadership, learning culture, change management, continuous evaluation	This component is the basis for designing the model.
3	Initial Model Design	Development of a draft conceptual model	The model contains: Leadership vision, learning team structure, reflection cycle, sustainability indicators.	Draft ready to be tested for validity and implementation
4	Expert Validation	Discussion with 3 education experts and 2 school principals	The model is considered relevant, but it is recommended to clarify the sustainability indicators.	The model is revised and strengthened with measurable indicators.
5	Limited Trial	Implementation in 1 school for 4 weeks	Increased teacher collaboration, regular reflection, and awareness of leadership roles	The model is considered applicable and has had an initial positive impact.

This research confirms that achieving sustainable, long-term quality education requires a fundamental transformation of school institutions to function as adaptive, collaborative, and innovative learning organizations. Based on findings from a preliminary study, it was discovered that most schools in Indonesia still operate within a traditional managerial framework, where leadership practices focus more on administrative and procedural aspects. This leadership pattern results in minimal space for developing collective learning among educators and education personnel, thus hindering the creation of an innovative and reflective culture, which are key characteristics of learning organizations. The absence of a system that encourages knowledge exchange, critical reflection, and collaboration between work units makes schools less responsive to the dynamics of ongoing change in the educational context. Therefore, a paradigm shift in school leadership and management is needed toward a more transformative and participatory direction to create a resilient and sustainable learning organizational culture (Hesti Putri et al., 2025).

The concept of a school as a learning organization emphasizes that learning activities are not only intended for students but must also involve all elements of the school, including educators, education staff, and school management. Based on the results of validation and trials, the model developed in this study has been proven to be able to encourage changes in teachers' professional behavior, including increased openness to feedback, active involvement in reflective discussions, and participation in collaborative decision-making processes. These findings reinforce the view that organizational culture transformation can begin with a participatory and empowering leadership approach, without having to wait for major structural changes. Furthermore, these behavioral changes indicate the creation of a work environment conducive to continuous learning, a key characteristic of a learning organization. Therefore, the resulting model not only has theoretical significance but also demonstrates practical potential in strengthening schools' internal capacity to adapt to change, encourage innovation, and grow sustainably (Lindgren et al., 2021).

The leadership role in the developed model demonstrates a significant contribution in supporting the process of transforming schools into sustainable learning organizations. Principals, who previously focused on managerial and administrative functions, began to adopt the role of active and visionary learning leaders. In this capacity, they were directly involved in formulating the institutional vision, building a learning community within the school environment, and creating a space that supported ongoing collective reflection. This leadership pattern prioritizes the principles of empowerment, collaboration, and participation of all school elements in the decision-making process, thereby encouraging both structural and cultural change simultaneously. Therefore, strategic leadership is positioned as a key element in driving systemic change that enables the formation of a collaborative, innovative learning culture oriented towards comprehensively improving the quality of education (Karim et al., 2023).

The sustainability component of this model is structured by adopting the principles of adaptive change management and implementing a continuous evaluation system that emphasizes active participation and critical reflection from all elements of the school. This approach is based on the systematic implementation of a structured evaluation cycle, encompassing reflection, replanning, implementation, and follow-up. Through this mechanism, schools can continuously monitor achievements, identify obstacles, and make necessary strategic adjustments. With this strategy, schools not only react to challenges but also strengthen their internal capacity to continuously adapt to the dynamics of educational change. This integration of processes also encourages increased institutional accountability and broadens the participation of all school members in strategic decision-making processes. Therefore, the sustainability aspect of this model is designed to avoid temporary changes and ensure that any innovations and transformations undertaken are profound, sustainable, and internalized within the school's organizational culture (Mahmud & Ramli, 2025).

This model is also designed to provide structured and systematic guidance in measuring indicators of educational sustainability at the educational unit level. These

indicators encompass important elements, such as increasing the professional capacity of teachers and education personnel, active participation of the school community in the learning process, efficient learning management, and the school's ability to adapt flexibly to changes in the internal and external environment. The existence of these indicators plays a crucial role not only as an internal evaluation tool that helps schools measure progress and design sustainable development strategies, but also as an evaluation instrument that can be used by external parties such as the government, accreditation institutions, and education partners to objectively assess school quality and performance. Thus, the indicators integrated in this model serve as a comprehensive and accountable measure in supporting the achievement of sustainable education and are able to respond to the dynamics and challenges of the times (AFRIADI et al., 2023).

It's important to note that implementing this model faces significant challenges. Findings from a limited pilot study indicate that the process of transforming organizational culture takes time, requires a high level of commitment, and consistent, ongoing implementation. In the initial implementation phase, some teachers demonstrated significant resistance, primarily due to a lack of familiarity with working patterns that emphasize open reflection and intensive collaboration among members of the school community. However, this resistance gradually diminished as teachers' understanding and awareness of the long-term benefits of this approach increased. This adaptation process underscores the importance of ongoing mentoring and support to strengthen the commitment of all school members to supporting the cultural change initiated by this model (Melnikova & Batuchina, 2023).

The validation results indicate that experts emphasize the importance of considering the local context in implementing the developed model. Although the model's structure is general and universal, its implementation needs to be carefully tailored to the work culture, resource availability, and unique characteristics of each school. This responsive approach to local context is considered crucial to ensure the model's relevance, effectiveness, and sustainability in practice. Therefore, the model is designed with a sufficient degree of flexibility, allowing for adaptation and modification according to the specific needs and conditions of educational institutions, in order to provide an appropriate response to the dynamics and challenges that arise in the field (Taneja-Johansson & Singal, 2025).

The findings of this study reinforce those of previous studies, which emphasized that the success of school transformation is largely determined by the presence of strong, transformative leadership. Leadership, in this context, is not understood merely as a formal position or structural position, but rather as a strategic role with the capacity to influence, inspire, and effectively direct the change process. The principal, as a learning leader, plays a central role in formulating a vision, building a school culture that supports innovation, and motivating all elements of the school to actively participate in efforts to improve the quality of education. Therefore, transformative leadership is a key element capable of creating positive direction and dynamics, while ensuring the

sustainability and effectiveness of change within the school environment (Roudhotul Nasikhah et al., 2024).

Thus, the model of the school as a learning organization developed in this study serves not only as a conceptual or theoretical framework but also as a practical tool that can be applied to drive significant change in the school environment. This model serves as a bridge connecting theoretical aspects with educational practices in the field, while also emphasizing that educational sustainability is fundamentally rooted in the school's internal processes of active learning, adaptation, and collective development. The approach adopted emphasizes the importance of involving all members of the school community in building a dynamic and adaptive learning culture to change, so that schools can maintain their relevance and effectiveness in facing today's educational challenges. Thus, this model not only provides strategic guidance in educational management but also strengthens the foundation for sustainable transformation focused on continuous quality improvement and innovation (Graichen et al., 2024).

Overall, this study confirms that the Research and Development (R&D) approach is effective in addressing practical needs in the education sector, as it is able to produce a model that is relevant and appropriate to real-world conditions. This approach not only provides applicable solutions to educational problems but also strengthens the systematic integration between theoretical and practical aspects. Furthermore, this study makes an important contribution to the development of educational leadership science by confirming that leadership focused on learning and sustainability is a key factor in achieving superior and sustainable educational quality. Thus, the results of this study not only provide benefits in the development of school leadership models but also broaden the conceptual understanding of how leadership can be a key driver of effective change in the long-term educational context (Bastida, Jr. et al., 2024).

CONCLUSIONS

Based on the results of the research and development conducted, it can be concluded that strategic leadership with a sustainability orientation plays a central role in designing and developing schools as effective learning organizations. The developed model demonstrates that visionary, collaborative, and reflective leadership is able to initiate and strengthen a culture of collective learning within the school environment, thereby contributing to the achievement of sustainable educational quality in the long term. Furthermore, the series of model development processes through the preliminary study, design, validation, and limited trial stages confirms that the Research and Development approach is an effective method in producing practical products relevant to the school's context and needs. The successful implementation of this model depends heavily on the school's ability to systematically implement continuous evaluation and learning cycles, led by leadership that is adaptive and responsive to the dynamics of change and the internal needs of the educational institution. Thus, this research not only contributes to the theoretical realm but also provides practical guidance that can strengthen the transformation of schools into effective and sustainable learning organizations.

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