LEX LOCALIS-JOURNAL OF LOCAL SELF-GOVERNMENT
ISSN:1581-5374 E-ISSN:1855-363X
VOL. 23, NO. 11(2025)

IMPLEMENTATION OF LOCAL WISDOM-BASED SCHOOL MANAGEMENT THROUGH ECO-ENZYME PROJECT RESEARCH TO ENHANCE ENVIRONMENTAL AWARENESS

Marliza Oktapiani [*1], Qurrota A'yun[2], Syarifah Soraya[3]

[1,2,3]Universitas Islam As-Syafi'iyah, Jakarta, Indonesia

Corresponding author: Marliza Oktapiani;
marlizaoktapiani.fai@uia.ac.id[1]

Abstract. Schools play a critical role in shaping students' environmental awareness, especially when management practices are rooted in local wisdom that emphasizes harmony with nature. Eco-enzyme projects provide a concrete avenue for integrating environmental education into school management. This study aims to evaluate the implementation of school management based on local wisdom through an eco-enzyme project research approach in enhancing environmental awareness among students at a State Islamic Senior High School in East Jakarta. The research employed the CIPP evaluation model Context, Input, Process, and Product to comprehensively assess needs, resources, implementation, and outcomes. Data were collected from grade XI students, teachers, and school administrators using observations, interviews, documentation, and questionnaires. The data were analyzed through reduction, display, and conclusion drawing. The findings show that (1) in the context aspect, the program was relevant to the school's vision and local wisdom values emphasizing harmony with the environment; (2) in the input aspect, there was support from teachers, basic laboratory facilities, and school funding (3) in the process aspect, the implementation of the eco-enzyme project was effective with active student participation (4) in the product aspect, the activities significantly increased students' environmental awareness and produced eco-enzyme products that can be utilized as liquid organic fertilizer. Therefore, the eco-enzyme project research based on local wisdom has proven effective in strengthening school management oriented toward sustainable education and environmental care. The integration of local wisdom-based eco-enzyme project research into school management contributes meaningfully to fostering sustainable education practices and enhancing students' environmental responsibility.

Keywords: School management, local wisdom, eco-enzyme, environmental awareness, CIPP model

1. Introduction

Globalization has brought significant changes in various aspects of life, including education. In this era, students are challenged to compete globally; Modernization often erodes local cultural values that form the identity of a nation. Amidst the influx of foreign cultures, it is essential to preserve local wisdom in educational management as a foundation for shaping students' character. This is consistent with the view that education aims not only to cultivate intellectual ability but also to build personality and moral integrity (Ripki et al., 2025). Recent bibliometric findings demonstrate that the integration of local wisdom into education is gaining momentum internationally, particularly in Indonesia, where research shows that such integration promotes cultural resilience and student identity in the face of global pressures (Arjaya & Suastra, 2024). Empirical data from East Java indicate that learner-management activities grounded in local traditions—such as arts,

traditional sports, and community service—significantly increased student self-discipline compared to global-competency-only models (Imron et al., 2023). Research exploring the effects of globalisation on education warns that, unless mediated by locally grounded educational management, the transmission of global values and traditions may displace moral integrity and erode national character (Zalli, 2024). These studies suggest that educational programmes which actively intertwine indigenous values and global competencies deliver more sustainable character-formation outcomes than models focused exclusively on global competitiveness. Educational managers must re-orient frameworks to incorporate local wisdom not as an optional add-on, but as a core pillar of student development in globalised contexts.

Environmental issues, particularly organic waste management, represent a pressing challenge that must be addressed from the primary and secondary education levels. Schools hold a strategic role in shaping sustainable attitudes and behaviours through contextual curricula and learning practices. One practical approach that has gained attention is the production of eco-enzyme—fermented products derived from organic waste—which not only reduces waste but also produces substances that can be used as natural cleaners or organic fertilisers. Studies in Indonesia have shown that applying project-based learning (PBL) for eco-enzyme production enhances students' knowledge and awareness of waste management (Al-Bahij et al., 2024). Al-Bahij et al. (2024) found that an elementary school PBL intervention increased waste-management knowledge by 81.6% compared to a control group. Meidiyanti, Wahyu & Hadi (2024) documented that middle-school students engaged in eco-enzyme production demonstrated improved collaboration and environmental awareness compared with peers in traditional classes. Meanwhile, Sarminingsih et al. (2023) showed that eco-enzyme use in organic waste decomposition accelerated methanogenesis and improved compost quality, thereby reinforcing the ecological relevance of hands-on learning in waste management. These findings suggest that embedding eco-enzyme activities within school curricula not only promotes knowledge but aligns with ecological outcomes, enhancing both student competence and environmental impact. Schools should move beyond passive instruction toward active eco-enzyme projects that integrate knowledge, practice, and ecological benefit.

The concept of school management based on local wisdom strengthens the relevance and sustainability of environmental programs, as it links school practices with community values and resources, thereby fostering acceptance and long-term commitment. Evaluation of environmental program implementation in schools should not only assess the final outputs but also consider context, resource readiness, and implementation dynamics. The CIPP (Context, Input, Process, Product) model offers a comprehensive evaluative framework for this purpose (Stufflebeam et al., 2000). Beyond local evidence, international literature on PBL consistently demonstrates its effectiveness in raising environmental awareness and problem-solving skills among secondary students. Quasi-experimental and qualitative studies across several countries report similar findings. For instance, an evaluation of PBL in secondary schools in Spain found increased ecological awareness following the implementation of environmental projects.

Education can provide meaningful learning experiences for students by integrating local wisdom. Unfortunately, many educational institutions pay insufficient attention to this potential in character building (Primayana et al., 2021). The presence of effective school management is vital in achieving these goals. The development of education should emphasize quality, safety, productivity, and environmental consciousness, rooted in local cultural values (Ilmi et al., 2025). Local wisdom in Indonesia reflects a societal synergy with nature. These values align with the goals of the Merdeka Curriculum currently implemented in schools, where the Profil Pelajar Pancasila (Pancasila Student Profile) highlights environmental care as an integral part of the learning process (Saidah et al., 2020). However, in reality, educational and socialization efforts to foster environmental awareness among students remain limited. This is compounded by inadequate school facilities, insufficient institutional support, lack of interactive teaching practices, and the absence of longitudinal research to observe long-term behavioral impacts (A'yun et al., 2024; Ijabgio, 2025).

Given the close relationship between school management and the underutilized potential of local wisdom, research is needed on the implementation of school management rooted in local values. In this study, local wisdom is integrated through the Eco-enzyme Project Research, responding to the issue of organic waste—particularly fruit peels, which are rarely utilized due to limited knowledge of waste management. Yet, such waste can be transformed into valuable products, namely eco-enzyme (A'yun et al., 2024). This study aligns with the Asta Cipta of the Republic of Indonesia, particularly the eighth pillar, which emphasizes the spirit of higher education in the present era. It also contributes to the achievement of Indonesia's Higher Education Key Performance Indicators (IKU): Indicator 2 (students gaining off-campus learning experiences), Indicator 3 (lecturers engaged in activities outside the campus), and Indicator 4 (research and lecturers' outputs utilized by society) (Ministry of Education and Culture, 2021). In addition, this study strengthens direct experiential learning by integrating eco-enzyme programs into the curriculum, thereby promoting long-term behavior change (Singerin, 2022).

Based on this background, this study evaluates the implementation of school management based on local wisdom through the Eco-enzyme Project Research at a State Islamic Senior High School (Madrasah Aliyah Negeri) in East Jakarta. The evaluation framework follows the CIPP model: (1) Context: analysis of needs, relevance to the school vision, and alignment with local wisdom and environmental concerns; (2) Input: assessment of resources including teachers, facilities, funding, and curricular support; (3) Process: observation of how the eco-enzyme project was implemented, including teaching strategies, student involvement, and challenges encountered; and (4) Product: evaluation of project outcomes, particularly the enhancement of students' environmental awareness and the tangible eco-enzyme products. This research integrates empirical findings on the chemical characteristics and practical applications of eco-enzyme as a valuable organic substance, thereby positioning the school program on both a scientific and community-based foundation.

2. Literature Review

Educational management is the process carried out to achieve the objectives of education by implementing structured learning across levels, from elementary schools, junior high schools, and senior high schools to higher education (Oktapiani et al., 2024). It involves planning, organizing, implementing, and supervising resources to achieve educational goals (Oktapiani et al., 2025). Local wisdom-based management refers to the integration of values, culture, and indigenous knowledge into the educational system, ensuring that the management of education reflects the identity of the community (Suyanti, 2019).

Based on this perspective, educational management integrates curricula and teaching methods that emphasize local cultural values while ensuring relevance to the challenges of the future. The integration of local wisdom into teaching and learning is not a new concept; however, its practical application has not yet been fully optimized. Observations from a 2024 fundamental research project on Prakarya dan Kewirausahaan (PKWU) subjects across seven State Islamic Senior High Schools (Madrasah Aliyah Negeri) in East Jakarta revealed that the current emphasis lies primarily on participation and collaboration, while overlooking the management of materials used in preparing traditional Indonesian foods, which often end up as unprocessed household waste. Other studies have emphasized the importance of environmental socialization by demonstrating that household waste can be transformed into useful products (Saidah et al., 2020; Sefi et al., 2023).

The development of lesson plans (RPP) should carefully consider students' diverse characteristics, including prior knowledge, potential, interests, and learning motivation. Therefore, it is crucial to integrate local wisdom into learning (Rezeki et al., 2024). Unfortunately, local wisdom values are often neglected, being perceived as irrelevant in modern contexts. In reality, these values can serve as models for cultural development, allowing teachers to analyze and assess not only students' cognitive abilities but also their affective competencies, thereby preventing the erosion of local cultural heritage (Jelita, 2022; Ilmi et al., 2025)

In this regard, local wisdom refers to the knowledge, values, and practices owned by communities and transmitted across generations. Within the context of the eco-enzyme project, integrating local wisdom involves embedding traditional practices of waste management into educational initiatives, thereby supporting environmental sustainability.

Eco-enzyme is a product of fermentation made from organic waste such as fruit and vegetable scraps, mixed with sugar and water. It typically has a dark brown color and a strong acidic aroma due to fermentation. Eco-enzyme can be used as a natural cleaning agent and organic fertilizer. Since it is produced entirely from organic materials without synthetic chemicals, eco-enzyme is eco-friendly and biodegradable (Deanada et al., 2024; Noerviana et al., 2023). Based on these characteristics, eco-enzyme holds significant potential as a sustainable cleaning solution that promotes green living and responsible waste management.

Project research is defined as a systematic approach to investigating a problem to generate new knowledge, solve issues, or develop innovative products (Yosuky et al., 2022). In the context of management, project research is considered a strategic activity involving the planning and administration of a project, including identifying objectives, mobilizing resources, anticipating risks, and evaluating outcomes (Nasution et al., 2019; Sihombing et al., 2022). It also reflects collaborative efforts across groups or disciplines to address issues or develop solutions, leveraging diverse expertise to achieve the desired results (Kardoyo, 2020).

From this explanation, project research can be summarized as a systematic activity undertaken to develop a deep understanding of a specific topic. In the case of the eco-enzyme project, it focuses on understanding the process of eco-enzyme production, exploring its benefits, and evaluating its environmental impact.

1. Methodology

This study employed an evaluation research design using the CIPP (Context, Input, Process, Product) model developed by Stufflebeam (Stufflebeam., 2017; Stufflebeam., 2000) The CIPP model was chosen because it provides a comprehensive framework to evaluate educational programs, not only focusing on outcomes but also considering needs, resources, implementation, and results. The study used a qualitative descriptive approach to explore the implementation of school-based management grounded in local wisdom through an eco-enzyme project research program. The qualitative approach enabled an in-depth understanding of the phenomenon within its natural setting. The research was conducted at a Madrasah Aliyah Negeri (Islamic Senior High School) in East Jakarta, during the academic year 2024/2025. Participants included the school principal, vice principals (curriculum and student affairs), subject teachers, and grade XI students involved in the eco-enzyme project. The evaluation was structured according to the four components of the CIPP model:

1. Context: Analysis of needs, relevance to school vision, and alignment with local wisdom and environmental concerns.
2. Input: Assessment of resources including teachers, facilities, funding, and curricular support.
3. Process: Observation of how the eco-enzyme project was implemented, including teaching strategies, student involvement, and encountered challenges.
4. Product: Evaluation of project outcomes, particularly the enhancement of students' environmental awareness and the tangible eco-enzyme products.

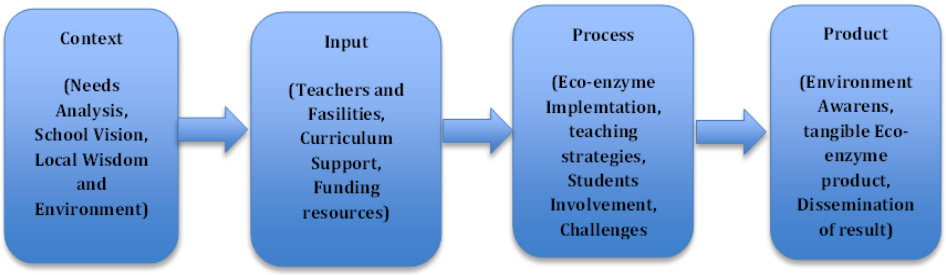

Figure 1. Flowchart of the CIPP evaluation model applied in the eco-enzyme school project research.

Data were collected through three techniques; Observation of classroom and project activities; In-depth interviews with principals, teachers, and students. Document analysis of school policies, program reports, and student project outputs. Research instruments consisted of observation guidelines, semi-structured interview protocols, and documentation checklists, all aligned with the four CIPP dimensions. Data were analyzed using the Miles and Huberman framework, involving three steps: Data reduction, Data display, and Conclusion drawing/verification. To ensure research credibility, the study applied triangulation of sources and techniques, as well as member checking with key informants.

2. Results and Findings

The findings of this study demonstrate that the implementation of eco-enzyme project research within the framework of school management based on local wisdom significantly contributes to environmental education in Madrasah Aliyah in East Jakarta. Using the CIPP model (Context, Input, Process, Product), the results reveal strong integration between the school's vision, resource support, learning dynamics, and product outcomes oriented toward sustainability (Oktapiani et al., 2022).

In the context aspect, the eco-enzyme program aligns closely with the school's vision of becoming an environmentally conscious madrasah rooted in Islamic values and local wisdom. This alignment not only addresses the real needs of the school in reducing organic waste but also strengthens students' character formation through the integration of religious values and environmental care. This finding echoes Stufflebeam's (2003) assertion that program success is largely determined by its relevance to actual needs, both within the school and the broader community. The program's contribution to character education and the development of the Profil Pelajar Pancasila further demonstrates its strategic role in preparing students for 21st-century challenges.

In terms of input, the study identifies support from school leadership, teacher involvement—particularly in Craft and Entrepreneurship subjects—and the use of basic laboratory facilities for fermentation. The primary resources, namely organic waste from the school canteen, are consistently available. Despite limited funding, teacher collaboration and student participation optimize program execution. This supports Zhang's (2011) view that resource evaluation is essential for program feasibility and sustainability, while also affirming the findings of Primayana &

Sastrawan (2021) on the importance of teacher collaboration in project-based learning.

The process aspect shows that the eco-enzyme project was effectively implemented through group work, organic waste collection, and fermentation activities guided by teachers. Student participation was evident at every stage, from reflective discussions to evaluating fermentation results. Nonetheless, challenges were noted, such as limited fermentation facilities and students' low initial understanding. Teachers addressed these by providing additional guidance, integrating reflective discussions, and encouraging peer collaboration. This aligns with Fitzpatrick, Sanders, & Worthen (2011), who emphasized that process evaluation should identify barriers while assessing strategies to overcome them. These findings also corroborate López et al. (2024) and Noerviana et al. (2023), who found that project-based learning enhances students' critical thinking, collaboration, and sustainability awareness.

In the product aspect, the research highlights two key achievements: (1) students successfully produced eco-enzyme solutions functioning as natural cleaners and liquid organic fertilizers, and (2) students' environmental awareness increased, evidenced by their initiative to apply eco-enzymes in their households. Thus, the program not only provided cognitive outcomes in terms of knowledge of organic waste management but also fostered affective outcomes through sustainable behavior. These findings reinforce Al-Bahij et al. (2024) and Amananti (2024), who confirmed the effectiveness of eco-enzyme projects in enhancing environmental literacy and embedding sustainability values.

Table 1. Field Findings Based on the CIPP Model

Aspect	Field Findings
Context	- School vision: environmentally friendly madrasah based on Islamic values and local wisdom. - Real needs: reducing organic waste in schools and the community. - Eco-enzyme program is relevant to character education, *Profil Pelajar Pancasila* (Pancasila Student Profile), and 21st-century skills.
Input	- Policy support: school principal and vice principal of curriculum. - Teacher involvement: craft and entrepreneurship teachers in designing the project research. - Resources: laboratory, organic waste from the school canteen, simple additional materials (sugar, water). - Limited funding: sourced from the

	school and small student contributions.
Process	- Activities: Grade XI students collect organic waste from the school canteen. - Implementation: project research based on the fermentation of organic waste into eco-enzyme under teacher supervision. - Challenges: lack of initial understanding, limited fermentation facilities, and limited study time. - Solutions: additional teacher mentoring, reflective discussions, and student collaboration.
Product	- Output: eco-enzyme solution as a natural cleaner. - Impact: increased student awareness of organic waste management and environmental care. - Dissemination: products exhibited during school events. - Long-term impact: students apply eco-enzyme at their homes.

Overall, the findings of this study demonstrate that the CIPP evaluation model provides a comprehensive understanding of the success of implementing the eco-enzyme project research. The alignment with the school's vision (context), optimization of available resources (input), effectiveness of project-based learning (process), and tangible outcomes in the form of eco-enzyme products and increased environmental awareness (product) highlight that the integration of local wisdom, character education, and environmental sustainability can strengthen value-based school management. Accordingly, these results affirm the potential of eco-enzyme project research as an innovative strategy to support the achievement of sustainable education goals.

3. Discussion

The findings of this study confirm that the CIPP evaluation model provides a systematic and comprehensive framework for analyzing the implementation of eco-enzyme project research grounded in local wisdom. In terms of context, the alignment of the program with the school's vision and local environmental needs demonstrates that integrating indigenous values can strengthen the school's identity while fostering students' ecological awareness. This supports Stufflebeam and Zhang's (2017) emphasis on the importance of program relevance to institutional goals and societal needs. Evidence from project-based environmental learning initiatives also shows that when evaluation frameworks support sustainability goals, students demonstrate more active participation and behavioral

change in waste-management practices (Al-Bahij et al., 2024). Noerviana et al. (2023) confirmed that project-based eco-enzyme activities enhance practical skill-building and promote sustainability values, strengthening the evaluative justification for integrating eco-projects into curriculum design. The alignment of contextual needs, environmental priorities, and culturally grounded school visions reinforces the suitability of the CIPP model for sustainable education management.

The input dimension shows that despite limited financial and material resources, optimization was achieved through teacher involvement and supportive school policies. This reflects the critical role of internal stakeholders in program success, consistent with Fitzpatrick, Sanders, and Worthen's (2011) assertion on the necessity of resource availability and stakeholder engagement in educational evaluation. Regarding process, the project-based learning dynamics highlighted the effectiveness of teacher scaffolding in overcoming technical challenges while enhancing student participation. These findings are in line with López et al. (2024) and Noerviana et al. (2023), who noted that project-based approaches foster 21st-century skills and sustainability awareness.

Finally, the product dimension demonstrates not only the tangible output in the form of eco-enzyme solutions but also the significant improvement in students' environmental awareness. The outcomes extended beyond the classroom, with students initiating eco-enzyme practices at home. This corroborates studies by Al-Bahij et al. (2024) and Amananti (2024), which underscore the dual role of eco-enzyme projects as both environmental education tools and sustainable practices. Overall, the findings suggest that integrating eco-enzyme project research with the CIPP framework strengthens school management based on local wisdom and supports sustainable education objectives.

4. Conclusion

This study concludes that implementing eco-enzyme project research rooted in local wisdom successfully enhanced students' environmental awareness while supporting school management practices. The CIPP-based evaluation demonstrated that (1) the program was relevant to the school's vision and community needs, (2) available inputs were optimized through teacher engagement and school policy support, (3) the learning process was effective with active student participation despite technical limitations, and (4) the outcomes not only produced eco-enzyme solutions but also fostered sustainable behaviors both at school and at home. Therefore, eco-enzyme project research grounded in local wisdom can be recommended as an innovative school management strategy for promoting sustainable education while contributing to the development of the Pancasila Student Profile and 21st-century competencies.

5. Acknowledgments

The authors would like to express their sincere gratitude to the **Ministry of Higher Education, Science, and Technology** for providing funding support through the **Fundamental Research Grant Scheme (Regular) 2025**. This grant has made a significant contribution to the implementation and completion of this research.

6. References

1. A'yun, Q., Risah., & Sari, A. K. (2024). Edukasi pengolahan sampah kulit buah dengan eco-enzyme di Pondok Pesantren Al Hassan, Bekasi. *Abditani: Jurnal Pengabdian Masyarakat, 7*(2), 208–212.
2. Al-Bahij, A., Umrotullatifah, N., Qurrotaini, L., & Parta Santi, A. U. P. (2024). Eco-enzyme project-based learning in the elementary school: Improving SDGs 12.5 waste management knowledge. *Jurnal Ilmiah Sekolah Dasar*.
3. Al-Bahij, A., Umrotullatifah, N., Qurrotaini, L., & Utami Parta Santi, A. (2024). Eco-Enzyme Project-Based Learning in the Elementary School: Improving SDGs 12.5 Waste Management Knowledge. Jurnal Ilmiah Sekolah Dasar, 8(1), 156-164. https://doi.org/10.23887/jisd.v8i1.63421
4. Al-Bahij, A., Umrotullatifah, N., Qurrotaini, L., & Utami Parta Santi, A. (2024). Eco-enzyme project-based learning in the elementary school: Improving SDGs 12.5 waste management knowledge. Jurnal Ilmiah Sekolah Dasar, 8(1), 156-164. https://doi.org/10.23887/jisd.v8i1.63421
5. Amananti, W. (2024). Increasing knowledge and skills in processing orange peel waste into eco-enzymes for senior high school students. *Journal of Community Service/Education*.
6. Arjaya, I. B. A., & Suastra, I. W. (2024). Global trends in local wisdom integration in education: A comprehensive bibliometric mapping analysis from 2020 to 2024. International Journal of Learning, Teaching and Educational Research. https://www.ijlter.org/index.php/ijlter/article/view/10728
7. Deanada, E., & Rini, H. P. (2024). Pemberdayaan masyarakat melalui pembuatan eco enzyme di Desa Jarak Kabupaten Jombang. *Jurnal Padma, 4*(1), 222–228. https://doi.org/10.56689/padma.vpadma.v4i1.1382
8. Fitzpatrick, J. L., Sanders, J. R., & Worthen, B. R. (2011). *Program evaluation: Alternative approaches and practical guidelines* (4th ed.). Boston, MA: Pearson.
9. Ijabgio (2025). Chemical characteristics of eco-enzymes as liquid organic fertilizer (study on eco-enzyme properties and application). *International Journal of Agriculture and Bio*.
10. Ilmi, Z., Rambang., Muharramsyah., & Marshitah, I. (2025). Pengembangan model manajemen pembelajaran berbasis kearifan lokal Peri Mestike dalam budaya Gayo. *Jurnal Review Pendidikan dan Pengajaran, 8*(5), 1874–1884.
11. Imron, A., Rochmawati, K. N., Lestari, A. D., Haris, M., & Purwanto, M. H. (2023). Exploration of integrating local wisdom values in education: Focus on feasible learner management activities and the stakeholders. In Proceedings of the 2nd International Conference on Educational Management and Technology (ICEMT 2023), Atlantis Press. https://www.atlantis-press.com/proceedings/icemt-23/125995184
12. Jelita, R. (2022). Produksi eco enzyme dengan pemanfaatan limbah rumah tangga untuk menjaga kesehatan masyarakat di era new normal. *Jurnal Maitreyawira, 3*(1), 28–35. https://doi.org/10.69607/jm.vjm.v3i1.49
13. Kardoyo, M. F. N. F. (2020). *Green leadership*. Semarang: LPPM UNNES.
14. Kementerian Pendidikan dan Kebudayaan. (2021). *Buku panduan indikator kinerja utama perguruan tinggi negeri*. Direktorat Jenderal Pendidikan Tinggi.

15. López, J. A., et al. (2024). Effects of a project-based learning methodology on environmental awareness of secondary school students. *International Journal of Instruction*.
16. Meidiyanti, R., Wahyu, & Hadi, R. (2024). Use Of Waste In The School Environment Of Muhammadiyah Middle School Students Training Eco Enzyme Production Day. Indonesian Journal of Conservation, 13(1), 36-41. https://journal.unnes.ac.id/journals/ijc/article/view/7401
17. Nasution, W. A., & Hasyim. (2019). Evaluasi model pembelajaran project based learning dengan menggunakan CIPP (context, input, process, product) terhadap prestasi belajar pada mata kuliah kewirausahaan mahasiswa pendidikan administrasi perkantoran angkatan 2016 Fakultas Ekonomi Unimed Wird. *Jurnal Administrasi dan Perkantoran Modern, 8*(4), 1–9.
18. Noerviana, A. P., Mariska, R. N., Ramadhani, N. V. S. E., Septiana, N. P., Citra., & Anwar, R. N. (2023). Project-based learning training with eco-enzyme activities to support the implementation of the independent curriculum. *BATIK: Jurnal Pengembangan dan Pengabdian Masyarakat Multikultura, 1*(2), 89–93. https://journal.irpi.or.id/index.php/batik
19. Noerviana, A. P., Mariska, R. N., Ramadhani, N. V. S. E., Septiana, N. P., Citra., & Anwar, R. N. (2023). Project-based learning training with eco-enzyme activities to support the implementation of the independent curriculum. BATIK: Jurnal Pengembangan dan Pengabdian Masyarakat Multikultura, 1(2), 89–93. https://journal.irpi.or.id/index.php/batik
20. Oktapiani, M., Sutiono, S., & Choli, I. (2022). Evaluation of the implementation of the kampus mengajar program based on the CIPP model. Ta'dib: Jurnal Pendidikan Islam, 27(2), 132-145.
21. Oktapiani, M., et al. (2024). *Manajemen pendidikan* (Cetakan 1). Banjarnegara: PT Penerbit Qriset Indonesia.
22. Oktapiani, M., et al. (2025). *Manajemen pendidikan* (Cetakan 2). Banjarnegara: PT Penerbit Qriset Indonesia.
23. Primayana, K. H., & Sastrawan, K. B. (2021). Urgensi manajemen pendidikan berbasis nilai-nilai kearifan lokal Tri Hita Karana dalam meningkatkan komitmen organisasional guru. *Edukasi: Jurnal Pendidikan Dasar, 2*(2), 163–172. https://doi.org/10.55115/edukasi.vedukasi.v2i2.1797
24. Rezeki, T. I., Irwan., Sagala, R. W., Rabukit., Helman., & Muhajir. (2024). Edukasi pengelolaan sampah berbasis kearifan lokal untuk lingkungan berkelanjutan. *Jurnal Abdimas Maduma, 3*(2), 9–19. https://doi.org/10.52622/jam
25. Ripki, A. J. H., & Arifannisa. (2025). Peran manajemen pendidikan berbasis kearifan lokal dalam membentuk karakter peserta didik di era globalisasi. *Journal of Education, 7*(2), 9258–9266.
26. Saidah, K., Aka, K. A., & Damariswara, R. (2020). *Nilai-nilai kearifan lokal masyarakat Indonesia dan implementasinya dalam pendidikan sekolah dasar* (Vol. 4, No. 1). Banyuwangi: LPPM Institut Agama Islam Ibrahimy Genteng.
27. Sarminingsih, A., Sumiyati, S., Alfarisi, I., Setiawan, R., & Farrell Andika, A. (2023). Study of the Effect of Adding Eco-Enzyme to the Process of Decomposing Organic Waste on the Quality of Compost, Leachate, and Methane Gas Production. Jurnal Presipitasi, 20(3), 655-668. https://ejournal.undip.ac.id/index.php/presipitasi/article/view/58792

28. Sefi, P., Siti, L. E., Agus, F., & Chamidi, S. (2023). Manajemen kurikulum berbasis kearifan lokal. https://arradpratama.com/
29. Sihombing, D., & S., G. B. (2022). *Manajemen sekolah berbasis budaya lokal*. Yogyakarta: Deep Publishing.
30. Singerin, S. (2022). *Administrasi dan manajemen sekolah* (Cetakan 1). Sumatera Barat: CV Azka Pustaka.
31. Stufflebeam, D. L., & Zhang, G. (2017). *The CIPP evaluation model: How to evaluate for improvement and accountability*. Guilford Press.
32. Stufflebeam, D. L., & Zhang, G. (2017). The CIPP evaluation model: How to evaluate for improvement and accountability. Guilford Press. https://www.researchgate.net/publication/316881356_The_CIPP_Evaluation_Model_How_to_evaluate_for_improvement_and_accountability
33. Stufflebeam, D. L., Madaus, G. F., & Kellaghan, T. (Eds.). (2000). *Evaluation models: Viewpoints on educational and human services evaluation* (2nd ed.). Boston, MA: Kluwer Academic Publishers.
34. Suyanti. (2019). Manajemen pengelolaan sekolah berbasis kearifan lokal di SD Negeri Rongkop. In *Prosiding Seminar Nasional: Penguatan Karakter Berbasis Literasi Ajaran Tamansiswa Menhadapi Revolusi Industri 4.0* (pp. 259–265).
35. Yosuky, D., Linardo, V., Rachmi, T. S., & Santono, F. (2022). Analisa project management terhadap produk eco enzyme. *Serat Acitya: Jurnal Ilmiah UNTAG Semarang, 11*(2), 149–170. https://doi.org/10.56444/sa.vsa.v11i2.870
36. Zalli, E. (2024). Globalization and education: Exploring the exchange of ideas, values, and traditions in promoting cultural understanding and global citizenship. Interdisciplinary Journal of Research and Development, 11(1 S1), 55. https://doi.org/10.56345/ijrdv11n1s109