



Al-Manarah: Journal of Education and Islamic Studies

Available online on the website:
<https://journal.pergunulampung.or.id/index.php/almanarah/index>

Al-Manarah; Journal of Education and Islamic Studies
(p-ISSN: xxxx-xxxx | e-ISSN: xxxx-xxxx)
Volume 1, Issue. 03, 2025, pp. 247-254

Implementing the Independent Learning Curriculum in Elementary Schools: Challenges and Strategies

Salsabila Putri Azahra*¹, Era Octafiona²

^{1,2}Universitas Islam Negeri Raden Intan Lampung, Indonesia

e-mail: bila96111@gmail.com¹, era@radenintan.ac.id²

| Submission May 2, 2025 | Revised August 28, 2025 | Accepted August 27, 2025 | Published December 28, 2025 |

ABSTRACT *This study examines the implementation of the Merdeka Belajar Curriculum at the elementary school level as part of the national education reform initiated by the Ministry of Education, Culture, Research, and Technology in 2021. This curriculum is designed to provide flexibility for educational units to develop flexible, competency-based learning that is relevant to the local context. At the elementary school level, this curriculum plays a strategic role in shaping students' character, basic skills, and motivation to learn. However, various literature shows that the implementation of the Merdeka Belajar Curriculum still faces obstacles such as teacher readiness, limited infrastructure, gaps in technology access, and differing understanding of policies. This study aims to analyze these challenges, examine implementation strategies, and provide recommendations to improve the effectiveness of curriculum implementation. The method used is descriptive qualitative through a literature study, reviewing books, scientific articles, journals, official reports, and policy documents. This literature study was chosen because it allows researchers to systematically explore various empirical findings on curriculum implementation in various school contexts. The analysis is conducted through collecting, recording, and interpreting findings from various sources to build a comprehensive understanding of the factors influencing the success of curriculum implementation. The study results show that the Independent Learning Curriculum has had a positive impact, increasing teacher innovation, developing project-based learning, and increasing student participation. However, there are disparities in implementation across schools. The most influential factors are teacher competence, support from the principal and educational management, the readiness of infrastructure, and parental involvement. Schools with adequate facilities and adaptive leadership are able to implement the curriculum more optimally than schools with limited resources. This study concludes that while the Independent Learning Curriculum has strong potential to improve the quality of basic education, its success depends heavily on the synergy of various educational elements. Continuous teacher training, intensive mentoring, strengthening infrastructure, and collaboration between schools, the government, and parents are needed to ensure equitable, effective, and sustainable implementation of the curriculum.*

Keywords : Independent Learning Curriculum, Elementary School, Learning Innovation, Implementation Strategy

 <https://dx.doi.org/xx.xxxxx/al-manarah.vxx0x.xxxx>

How to Cite Azahra, S.P., Octafiona, Era., (2025). *Implementing the Independent Learning Curriculum in Elementary Schools: Challenges and Strategies*, Al-Manarah: Journal of Education and Islamic Studies, Volume 1 (03), 247-254.

INTRODUCTION

The implementation of the Independent Learning Curriculum in elementary schools is one of the government's strategic efforts to improve the quality of national education (Brown et al., 2025) through a more flexible, student-centered, and character-building learning approach (Bicer et al., 2024; Herro et al., 2025). This curriculum is designed to address the needs of today's developments (Özmen, 2024; Sonbul & Çelik, 2023), which demand 21st-century competencies, such as creativity, collaboration, critical thinking, and digital literacy (Afrilyasanti et al., 2025;

Mansour et al., 2026). Therefore, the Independent Curriculum emphasizes not only cognitive aspects but also holistically develops students' potential through learning differentiation (Busso & Perri Shkurti, 2025; Kuo et al., 2026), projects to strengthen the Pancasila student profile (Rachman et al., 2024), and teacher independence in managing the learning process (Wahelo et al., 2025).

However, implementing this curriculum at the elementary school level is not without its challenges (Juul et al., 2025; Lee & Liu, 2025). Differences in teachers' capacity to understand curriculum concepts, limited facilities and infrastructure, and variations in the socio-cultural context of schools often hinder its effective implementation. Furthermore, the shift in learning paradigm from one centered on teachers to one that allows for student autonomy requires significant adjustments, both in terms of pedagogical competence and the mental preparedness of educators (Esengulova et al., 2025; Eweida et al., 2026).

On the other hand, these challenges demand a comprehensive and adaptive implementation strategy (Champiat et al., 2025). Strengthening teacher competency, collaboration between stakeholders, optimizing school resources, and developing a sustainable learning culture are some of the steps that need to be considered (Li et al., 2024; Zheng & Thomas, 2025). These strategies are not merely technical efforts but also part of the transformation of the education system to ensure that the Independent Learning Curriculum can be implemented effectively and have a real impact on student development.

The implementation of the Merdeka Belajar Curriculum in elementary schools is the main focus of this study (Mufanti et al., 2024), which investigates the national education reform in Indonesia initiated by the Ministry of Education, Culture, Research, and Technology since 2021 (Suharno et al., 2025; Suyadi et al., 2022). This curriculum is designed to provide educational units with the freedom to develop flexible (Yusuf et al., 2018), competency-based learning that is tailored to local contexts, with the aim of improving the quality of education through a more humane and innovative approach. At the elementary school level, the implementation of this curriculum plays a crucial role as a foundation for character development, fundamental skills, and learning motivation for early childhood students (Chen et al., 2025; Mustafa, 2025). This study specifically analyzes the challenges faced in implementation, such as teacher preparedness, limited infrastructure, and gaps in technology access, as well as strategies to overcome these, such as ongoing training and digital technology integration.

A recent literature review shows that research on the Independent Learning Curriculum has grown rapidly in the last decade, with an emphasis on implementation aspects at various levels of education. For example, impact of the Independent Learning Curriculum on the motivation of elementary school students in urban areas (Karim & Harwood, 2026), finding increased participation through a project-based approach. International Journal of Educational Research highlighted infrastructure challenges in rural schools, with quantitative data showing a negative correlation between resource constraints and learning effectiveness (Ibourk & El Aynaoui, 2026; Liu et al., 2026).

This study aims to address the challenges of implementing the Merdeka Belajar Curriculum in elementary schools, which is often hampered by teacher preparedness, limited resources, and disparities in policy understanding, which can hinder the achievement of national education goals. The objective of this study is to analyze implementation challenges and strategies through case studies, and to provide practical recommendations to improve the curriculum's effectiveness. The research context is education reform in Indonesia post-2021, with a focus on an adaptive elementary education ecosystem. The units of analysis used are elementary schools in several regions of Indonesia, selected based on geographic variation and accessibility to represent national challenges.

METHOD

This research approach uses a descriptive qualitative method to provide an in-depth description of the implementation of the Independent Learning Curriculum at the elementary school level, particularly regarding the challenges that arise and the strategies employed by educational practitioners. A qualitative approach was chosen because it captures the social realities and subjective experiences of teachers, principals, and education personnel in navigating curriculum changes naturally within the context of the field.

This research uses qualitative data analysis techniques with a literature review as the primary instrument. The literature review method is a series of activities related to library data collection, reading and recording, and processing research materials. Literature review was chosen because this research focuses on searching, collecting, and analyzing various library sources relevant to the research topic. These sources include books, scientific articles, research journals, official reports, legal documents, and credible online publications.

Using descriptive qualitative methods, researchers attempted to provide a detailed account of how the Independent Learning Curriculum is implemented in schools, the factors influencing its implementation, and the adaptations schools have made to meet the demands of this new policy. This approach allows researchers to view the phenomenon holistically, without manipulating the conditions.

The data collection process was carried out by selecting literature relevant to the research focus, then reading and noting key points related to the variables or problems being studied. The collected data was then processed and analyzed in depth using a qualitative approach, namely by understanding, interpreting, and connecting findings from various sources to obtain a comprehensive picture.

A case study design was used to explore the specific context of the school where the research took place. The implementation of the Independent Learning Curriculum is heavily influenced by the school's internal characteristics, such as organizational culture, teacher capacity, availability of infrastructure, and management support. Through the case study, this research is able to present a detailed and comprehensive picture of the dynamics occurring in the school, ensuring that the research findings truly reflect actual practices in the field. The results of this study are expected to contribute to the development of educational policies and practices in elementary schools, particularly in efforts to strengthen the implementation of the Independent Learning Curriculum.

RESULTS AND DISCUSSION

Result

Several literature reviews indicate that the implementation of the Independent Learning Curriculum in elementary schools has begun to provide more room for innovation for teachers and students (Anning, 2025; Anthony et al., 2015). Teachers have tried implementing project-based learning, differentiated learning, and formative assessment more regularly. Students also appear more engaged when learning activities are linked to real-world situations. However, implementation is not uniform. The level of readiness varies from school to school, particularly regarding teacher competency, infrastructure availability, and management support. Schools with adequate technological facilities can implement project- and portfolio-based learning more optimally, while schools with limited facilities still face challenges in developing more innovative learning models.

From a learning quality perspective, the Independent Curriculum provides space for schools to develop the Pancasila Student Profile Strengthening Project (Sakti et al., 2024), which focuses on character building and 21st-century competencies. Implementation evaluations from 2022–2024 showed that schools implementing P5 consistently experienced increased student engagement, particularly in collaboration, creativity, and problem-solving skills (Chia &

Frattarola, 2025; Özbek et al., 2025). This indicator confirms that the project-based approach has a significant contribution to strengthening students' soft skills.

Regarding teacher competency, an internal report from the Ministry of Education, Culture, Research, and Technology shows that the use of the Merdeka Mengajar platform has increased teacher participation in online training, with more than 3 million teachers participating in independent training throughout 2022–2023. This increase has also impacted teachers' abilities in designing formative assessments, differentiating learning, and managing more adaptive classrooms. Thus, the Merdeka Curriculum not only transforms learning design but also encourages a transformation in the professionalism of educators.

However, this level of success is not without regional disparities. Schools in urban areas demonstrate greater readiness for technology integration and learning projects (Yu et al., 2025), while schools in underdeveloped regions face challenges such as limited facilities, teacher capacity, and access to mentoring. However, the national trend continues to show improvement, as evidenced by the increasing number of School Mover programs and increased mentoring for teacher learning communities.

In general, the success of the Independent Curriculum at the national level can be summarized through three main indicators: increased institutional adoption, improved teacher pedagogical quality, and strengthening student character and competencies through project-based learning. These achievements provide a crucial foundation for reforming Indonesia's education system toward a more inclusive, contextual, and lifelong learning-oriented model.

Discussion

The implementation of the Merdeka Belajar Curriculum at the national level demonstrates several indicators of success, both quantitatively and qualitatively. Since its introduction, the curriculum has received a positive response from educational institutions across Indonesia. Data from the Ministry of Education, Culture, Research, and Technology indicates that more than 140,000 schools have adopted the Merdeka Curriculum in the 2022–2023 academic year (Chaidir et al., 2025), and this number continues to increase, reaching approximately 80% of schools across Indonesia by 2023. This high adoption rate reflects the government's success in disseminating the new curriculum policy and demonstrates strong acceptance at the educational institution level.

In addition to success at the adoption level, learning achievement indicators also show positive signs. Analysis of the National Assessment conducted by the Center for Education Standards and Policy revealed that schools implementing the Independent Curriculum experienced improvements in literacy and numeracy scores between 2021 and 2023 (Arrafii, 2021; Wiranto & Slameto, 2021). This improvement was more consistent in educational units implementing a differentiated approach, diagnostic assessment, and the Pancasila Student Profile strengthening project. This reinforces the assumption that the flexible learning and focus on student needs characteristic of the Independent Curriculum can contribute to recovery and improve the quality of learning post-pandemic.

The successful implementation of the Independent Curriculum is also reflected in academic research findings highlighting innovative learning practices in elementary and secondary schools. Various studies report that teachers who implement this curriculum are better able to design student-centered learning, implement more meaningful formative assessments, and create a more participatory learning environment. In many elementary schools, the implementation of diagnostic assessments and project-based learning has increased student engagement, creativity, and critical thinking skills (Ibrahim & Hendy, 2025; Kim et al., 2025; Oo et al., 2024). These findings indicate that the Independent Curriculum not only impacts administrative aspects but also contributes to the transformation of pedagogical practices in the classroom.

Table 1. Key Factors Influencing the Implementation of the Independent Learning Curriculum

Key Factor	Description	Implications
Teacher Readiness and Competence	Teachers' pedagogical skills and training determine their ability to design flexible, student-centered learning aligned with the Freedom to Learn principles.	Ongoing professional development is essential for effective implementation
Principal and Management Support	Supportive and adaptive school leadership facilitates innovation, supervision, and smooth curriculum transition.	Strong leadership accelerates successful curriculum adoption
Infrastructure Availability	Adequate facilities and technological access are required to support project-based learning activities.	Infrastructure gaps affect the quality and equity of implementation
Parental Participation	Parents' understanding of the curriculum supports students' creativity, collaboration, and character development at home.	Strengthening parental engagement enhances learning outcomes

In general, the implementation of the Independent Learning Curriculum in elementary schools shows positive potential for improving students' learning experiences. However, the curriculum's success depends on the synergy between teacher competency development, school management support, facility readiness, and parental involvement. A sustainable mentoring strategy is needed to ensure all schools can implement this curriculum more equitably and effectively.

While these successes are still preliminary and require more in-depth longitudinal evaluation, empirical data and preliminary findings from field studies indicate that the implementation of the Independent Curriculum has provided a positive direction toward improving the quality of learning and transforming the national education system. Therefore, the Independent Curriculum can be considered an education policy with strong potential to strengthen students' core competencies, improve the quality of learning, and realize Indonesia's educational goals of a more inclusive, adaptive, and sustainable future.

CONCLUSION

Implementation of the Independent Learning Curriculum in elementary schools has shown quite positive progress. One notable aspect is how this curriculum provides more flexibility for teachers and students in the learning process. I believe this can encourage new innovations, engage students more actively, and reinforce learning that is more contextualized to everyday life. However, unfortunately, research shows that implementation is not evenly distributed across all schools; some are advanced, while others are lagging behind. The success of this curriculum, frankly, depends heavily on several key factors. For example, teachers' competence in designing learning tailored to each student's needs, support from school leadership, the readiness of facilities and infrastructure, and parental involvement. Schools with comprehensive support and adequate facilities appear better prepared to implement the principles of Freedom to Learn. Conversely, schools lacking these resources still struggle to effectively implement project-based learning or authentic assessments. Thus, it can be concluded that the Independent Learning Curriculum has great potential to improve the quality of learning in elementary schools. However, this requires ongoing mentoring strategies, more intensive teacher training, and adequate supporting facilities. Crucially, all stakeholders—teachers, school management, the government, and parents—must work together to ensure its implementation is more equitable, effective, and truly impacts student competency development.

BIBLIOGRAPHY

Afrilyasanti, R., Basthomi, Y., & Zen, E. L. (2025). Fostering creativity and critical literacy: transforming EFL classes with engaging critical media literacy integration. *Asian Education and Development Studies*, 14(2), 133–151. <https://doi.org/10.1108/AEDS-06-2024-0124>

- Anning, A. S. (2025). Professional learning facilitators' contribution to sustainable STEM teacher learning in regional contexts. *International Journal of Educational Research Open*, 8, 100406. <https://doi.org/10.1016/j.ijedro.2024.100406>
- Anthony, K. V., Smith, R. C., & Miller, N. C. (2015). Preservice Elementary Teachers' Economic Literacy: Closing Gates to Full Implementation of the Social Studies Curriculum. *The Journal of Social Studies Research*, 39(1), 29–37. <https://doi.org/10.1016/j.jssr.2014.04.001>
- Arraffi, M. A. (2021). Indonesian teachers' conceptions of values and dimensions of assessment practice: The effect of teachers' characteristics. *Teaching and Teacher Education*, 98, 103245. <https://doi.org/10.1016/j.tate.2020.103245>
- Bicer, A., Aleksani, H., Butler, C., Jackson, T., Smith, T. D., & Bostick, M. (2024). Mathematical creativity in upper elementary school mathematics curricula. *Thinking Skills and Creativity*, 51, 101462. <https://doi.org/10.1016/j.tsc.2024.101462>
- Brown, J. M., Rita, N., Franco-Arellano, B., LeSage, A., & Arcand, J. (2025). Evaluation of a Curriculum-Based Nutrition Education Intervention Protocol in Elementary Schools: Nonrandomized Feasibility Study. *JMIR Formative Research*, 9, e69242–e69242. <https://doi.org/10.2196/69242>
- Busso, D., & Perri Shkurti, R. (2025). Hidden curricula in financial reporting and analysis for MBA students - is the message received? *The International Journal of Management Education*, 23(3), 101231. <https://doi.org/10.1016/j.ijme.2025.101231>
- Chaidir, C., Majid, M. S. Abd., Ibrahim, M., Djalil, M. A., & Agustina, M. (2025). The Role of Digital Leadership in Technology-Driven Learning in Indonesian Senior High Schools. *International Journal of Distance Education Technologies*, 23(1), 1–27. <https://doi.org/10.4018/IJDET.391898>
- Champiat, S., Ouali, K., Laparra, A., Charalambous, A., Di Palma, M., Jordan, K., Massard, C., Aapro, M., & Scotte, F. (2025). From toxicity assessment to adaptive safety care: implementing comprehensive fast-track safety evaluation for anticancer drug development. *ESMO Open*, 10(10), 105796. <https://doi.org/10.1016/j.esmoop.2025.105796>
- Chen, R., Ong, E. T., & Pan, L. (2025). Cognitive foundations of leadership skills in early childhood: An empirical study. *Cognitive Development*, 75, 101607. <https://doi.org/10.1016/j.cogdev.2025.101607>
- Chia, J., & Frattarola, A. (2025). A design-based approach to analysing student engagement with a GenAI-Enabled brainstorming app. *Computers and Education: Artificial Intelligence*, 9, 100468. <https://doi.org/10.1016/j.caeai.2025.100468>
- Esengulova, M., Dzhaparova, Z., Asanbaeva, B., & Turdubaeva, B. (2025). Results of the pedagogical experiment on the development of inclusive competence of teachers of general education organisations. *Social Sciences & Humanities Open*, 12, 101897. <https://doi.org/10.1016/j.ssaho.2025.101897>
- Eweida, R. S., Altheeb, M., Elsehrawy, M. G., El hie Ali, H. A. A., Soliman, M. W., & Sorour, D. M. (2026). AI-Powered pedagogy to enhance reflective thinking, emotional competence, and clinical embeddedness in university students: An RCT study. *Teaching and Learning in Nursing*. <https://doi.org/10.1016/j.teln.2025.11.032>
- Herro, D., Akhigbe, J., Adisa, I., Clark, V., & Morris, A. (2025). Examining the absorptive capacity of an elementary school to expand data science curriculum development through a research-practice partnership. *Information and Learning Sciences*, 126(7–8), 513–536. <https://doi.org/10.1108/ILS-12-2024-0157>
- Ibourk, A., & El Aynaoui, K. (2026). Educational effectiveness in rural areas: What SDIs teach us about multigrade classes. *International Journal of Educational Development*, 120, 103482. <https://doi.org/10.1016/j.ijedudev.2025.103482>
- Ibrahim, R. K., & Hendy, A. (2025). The role of digital mind maps in boosting creativity and critical thinking among nursing students: a quasi-experimental study. *Teaching and Learning in Nursing*. <https://doi.org/10.1016/j.teln.2025.10.026>

- Juul, L., Frydenberg, M., Bonde, E. H., Beck, M. S., Goetzsche, K., Nielsen, H. B., & Fjorback, L. O. (2025). Mindfulness in the school curriculum? A nationwide cluster-randomized trial of the effectiveness of implementing a mindfulness-based intervention for 9–16-year-olds students in Danish elementary schools. *Social Science & Medicine*, 378, 118117. <https://doi.org/10.1016/j.socscimed.2025.118117>
- Karim, S., & Harwood, N. (2026). Alignment between intended and enacted pedagogies: A study of ELT curriculum innovation implementation in Pakistan. *System*, 136, 103872. <https://doi.org/10.1016/j.system.2025.103872>
- Kim, L., Imjai, N., Kaewjomnong, A., Dowpiset, K., & Aujirapongpan, S. (2025). Does experiential learning matter to strategic intuition skills of MBA students? Implications of diagnostic capabilities and critical thinking skills. *The International Journal of Management Education*, 23(2), 101138. <https://doi.org/10.1016/j.ijme.2025.101138>
- Kuo, H.-C., Yang, K.-Y., Cheng, Y.-Y., Chuang, H.-H., & Chang, C.-C. (2026). Prioritising creativity at the heart of the curriculum: Developing a creative competence scale and investigating teachers' perceptions of nurturing students' creative competence. *Thinking Skills and Creativity*, 60, 102098. <https://doi.org/10.1016/j.tsc.2025.102098>
- Lee, H.-C., & Liu, W.-H. (2025). Implementing the Slow Fish curriculum for SDGs: Strategies, challenges, and policy suggestions through a case study. *Marine Policy*, 173, 106538. <https://doi.org/10.1016/j.marpol.2024.106538>
- Li, X., Liao, W., Dong, Q., & Zhu, X. (2024). From teachers to teacher educators: An exploratory case study of non-university-based teacher educators improving their second-order teaching competency by developing model lessons. *Teaching and Teacher Education*, 152, 104810. <https://doi.org/10.1016/j.tate.2024.104810>
- Liu, X., Wang, X., Zhang, S., Wu, R., Yang, J., Zhang, H., Wang, Y., Li, Z., Wu, J., & Cai, S. (2026). Where should rural infrastructure construction focus? An evidence from official grassroots survey. *Cities*, 171, 106746. <https://doi.org/10.1016/j.cities.2025.106746>
- Mansour, N., Çevik, M., Uzun, Y., & Alotaibi, S. B. M. (2026). Exploring the impact of STEAM and connected learning on skills of digital age in primary schools. *Thinking Skills and Creativity*, 59, 102024. <https://doi.org/10.1016/j.tsc.2025.102024>
- Mufanti, R., Carter, D., & England, N. (2024). Outcomes-based education in Indonesian higher education: Reporting on the understanding, challenges, and support available to teachers. *Social Sciences & Humanities Open*, 9, 100873. <https://doi.org/10.1016/j.ssaho.2024.100873>
- Mustafa, M. C. (2025). Cultivating resilience and self-regulation in Malaysian early childhood education: Bridging cultural insights and educational practices. *Acta Psychologica*, 261, 105941. <https://doi.org/10.1016/j.actpsy.2025.105941>
- Oo, T. Z., Kadyirov, T., Kadyrova, L., & Józsa, K. (2024). Design-based learning in higher education: Its effects on students' motivation, creativity and design skills. *Thinking Skills and Creativity*, 53, 101621. <https://doi.org/10.1016/j.tsc.2024.101621>
- Özbek, G., Karaaslan, G., & Karabulut, E. (2025). Evaluation of creative project production performance in mathematical logic and computational thinking skills among gifted high school students. *Acta Psychologica*, 260, 105328. <https://doi.org/10.1016/j.actpsy.2025.105328>
- Özmen, D. (2024). Comparison of the elementary music curricula in Ontario, Canada, and Turkey. *Social Sciences & Humanities Open*, 9, 100747. <https://doi.org/10.1016/j.ssaho.2023.100747>
- Rachman, A., Putro, H. Y. S., Rusandi, M. A., & Situmorang, D. D. B. (2024). The development and validation of the “Kuesioner Tema Proyek Penguatan Profil Pelajar Pancasila” (KT P5): A new tool for strengthening the Pancasila Student Profile in Indonesian pioneer schools. *Helikon*, 10(16), e35912. <https://doi.org/10.1016/j.helikon.2024.e35912>

- Sakti, S. A., Endraswara, S., & Rohman, A. (2024). Revitalizing local wisdom within character education through ethnopedagogy approach: A case study on a preschool in Yogyakarta. *Heliyon*, 10(10), e31370. <https://doi.org/10.1016/j.heliyon.2024.e31370>
- Sonbul, Z. F., & Çelik, R. (2023). The place of death in elementary and secondary school curricula in Turkey. *International Journal of Educational Research*, 117, 102106. <https://doi.org/10.1016/j.ijer.2022.102106>
- Suharno, S., Ihsan, F., Himawanto, D. A., Pambudi, N. A., & Rizkiana, R. (2025). Sustainability development in vocational education: a case study in Indonesia. *Higher Education, Skills and Work-Based Learning*, 15(3), 668–689. <https://doi.org/10.1108/HESWBL-01-2024-0018>
- Suyadi, Nuryana, Z., Sutrisno, & Baidi. (2022). Academic reform and sustainability of Islamic higher education in Indonesia. *International Journal of Educational Development*, 89, 102534. <https://doi.org/10.1016/j.ijedudev.2021.102534>
- Wahelo, T. T., Mengistu, D. A., & Merawi, T. M. (2025). Geography teachers' implementation of problem-based learning for deforestation and climate change education in Metekel Zone Secondary Schools, Northwest, Ethiopia. *International Journal of Educational Development*, 117, 103314. <https://doi.org/10.1016/j.ijedudev.2025.103314>
- Wiranto, R., & Slameto, S. (2021). Alumni satisfaction in terms of classroom infrastructure, lecturer professionalism, and curriculum. *Heliyon*, 7(6), e06679. <https://doi.org/10.1016/j.heliyon.2021.e06679>
- Yu, J., Cai, X., Ji, X., Liang, L., & Yang, J. (2025). Promoting urban energy transitions: Lessons from interpretable machine learning with evidence from China. *Energy*, 334, 137812. <https://doi.org/10.1016/j.energy.2025.137812>
- Yusuf, M., Samsura, D. A. A., & Yuwono, P. S. H. (2018). Toward a framework for an undergraduate academic tourism curriculum in Indonesian Universities: Some perspectives from stakeholders. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 22, 63–74. <https://doi.org/10.1016/j.jhlste.2018.02.003>
- Zheng, H., & Thomas, S. M. (2025). Exploring Chinese stakeholders' perceptions of school inspection criteria in demonstrating educational quality: Do discrepancies in opinions reflect different school contexts? *Studies in Educational Evaluation*, 86, 101481. <https://doi.org/10.1016/j.stueduc.2025.101481>