

Application of Open Learning Technology and Hybrid Learning Education Policy in Elementary Schools

Dila Rahmaniyah^{1*}

¹ Universitas Islam Negeri Kiai Ageng Muhammad Besari Ponorogo, Ponorogo, Indonesia

Abstract

Article history:

Received: January 7, 2022
Revised: February 23, 2022
Accepted: April 26, 2022
Published: June 30, 2022

Keywords:

Education Policy,
Digital Literacy,
Hybrid Learning,
Open Learning Technology,
Primary school.

Identifier:

Nawala
Page: 48-61
<https://nawala.io/index.php/ije>

Digital transformation in the world of education has encouraged the application of open learning technology and hybrid learning models, including at the elementary school level. This study aims to critically examine how open learning technologies and hybrid learning policies are implemented in the context of basic education, as well as the challenges and strategies that come with it. The literature study method was used to analyze some selected scientific articles from Google Scholar. The results of the study show that the success of implementation is greatly influenced by the readiness of digital infrastructure, teacher competence, and supportive education policies. The main challenges include limited access to technology, low digital literacy of teachers, and the role of parents that is not optimal. Optimization strategies include teacher training, adaptive curriculum development, and collaboration between schools and communities. This study concludes that the implementation of hybrid learning in elementary schools must be contextual, collaborative, and supported by inclusive policies in order to be able to improve the quality of education in a sustainable manner.

*Corresponding author:
rahmaniyahdila@gmail.com (Dila Rahmaniyah)

1. Introduction

Digital transformation in the world of education has become a necessity in the era of the Industrial Revolution 4.0 and technological disruption that changes the way individuals learn, interact, and access information. Education in Indonesia, including at the elementary school level, is inseparable from the impact of this change. One of the prominent forms of transformation is the application of open learning technology and hybrid learning education policies which are both an alternative and the main strategy in responding to today's learning challenges. Open learning refers to the use of technology and digital resources to provide wider, flexible, and inclusive access to education, while hybrid learning is a blended learning model that combines the advantages of face-to-face and online learning. This change in learning paradigm has been accelerated by the COVID-19 pandemic that has hit the world since the beginning of 2020.

The emergency situation forced educational institutions to adapt quickly to distance learning conditions. Elementary schools, which previously relied heavily on conventional methods and direct interaction between teachers and students, had to change their learning strategies by leveraging digital platforms such as Learning Management Systems (LMS), video conferencing, and social media. Hybrid learning emerged as a logical response to bridge the limitations of pure online learning while maintaining the elements of direct social interaction and pedagogy that are important in early childhood (Rapanta et al., 2020). However, the application of open learning technology and hybrid learning at the elementary level does not necessarily run smoothly. Various challenges emerged, ranging from limited digital infrastructure,

inequality of internet access, lack of teacher competence in utilizing learning technology, to the lack of parental participation as home learning companions.

Research by Anugrahana (2020) revealed that many elementary school students, especially in remote areas, experience serious obstacles in participating in online learning due to the lack of adequate devices and networks. On the other hand, elementary school teachers are also faced with the challenge of designing learning that is interesting, age-appropriate, and meaningful even though it is delivered online. Within the policy framework, the Indonesian government has responded to these challenges by developing various strategic initiatives, such as the Merdeka Belajar program, the launch of the Rumah Belajar platform, and support for the development of digital learning content. However, this effort still requires harmonization between central regulations and implementation at the regional and education unit levels. The digital divide and disparities between regions are issues that must be anticipated through inclusive and equitable policies. Hwang et al. (2021) emphasized that the success of hybrid learning policies is highly determined by the alignment between planning, training of educators, and the availability of supporting facilities in the field. It is important to understand that elementary school students are in a critical period of cognitive and social development.

Therefore, the use of learning technology should not only pursue digitalization, but must consider a pedagogical approach that is in accordance with the characteristics of elementary school students. Technology should be a tool that strengthens teacher-student interaction, not a replacement for the role of humans in education. In this context, hybrid learning has great potential if it is designed wisely,

namely through the integration of interactive digital content with hands-on learning activities that build values, character, and critical thinking skills. Based on this background, this study aims to examine in depth the application of open learning technology and hybrid learning policies in elementary schools through a literature study approach. This study will review best practices, implementation challenges, and learning policy development and innovation strategies in the digital era. Through the analysis of various relevant empirical and theoretical studies, this manuscript is expected to contribute to the development of a basic education system that is more responsive, adaptive, and ready to face future challenges.

2. Literature Review

The literature on the application of open learning technology and hybrid learning in basic education shows that digital transformation has opened up new opportunities and challenges in the learning process. According to Marbun (2021), open learning technology refers to a system that provides the widest possible access to educational resources through digital platforms. This technology includes the use of a Learning Management System (LMS), learning videos, interactive learning applications, and other online learning resources that can be accessed by teachers and students. In the context of elementary schools, the application of this technology must take into account the age limitations of students and the need for assistance in the learning process. Meanwhile, hybrid learning is a pedagogical approach that combines face-to-face and online learning methods. This model allows for flexibility in students' time, place, and learning style, as well as increasing the effectiveness of

teacher-student interactions. The implementation of hybrid learning in elementary schools needs to be carefully designed to maintain a balance between hands-on learning experiences and digital engagement.

This transformation is not just about using digital tools; it also demands a fundamental change in pedagogical approaches. Various studies, such as those conducted by Purwanto (2020) and Nikolopoulou et al. (2021), emphasize the importance of teacher readiness, adequate digital infrastructure, and policy support in facilitating the implementation of hybrid learning. Teacher readiness is a crucial factor, as they must master the technology and be able to design engaging and effective learning experiences both offline and online. On the other hand, uneven digital infrastructure, especially in remote areas, presents a major obstacle. Therefore, policy support from the government and relevant institutions is essential to ensure equitable access and quality. Additionally, curriculum adjustments, teacher training, and parental involvement are important elements that must be considered. Parental involvement, in particular, plays a significant role in assisting children during online learning and ensuring the process runs smoothly. By considering all these elements, the digital transformation in basic education is expected to be optimal and sustainable, creating a more relevant and adaptive learning experience for the next generation.

3. Methods

This study uses a literature review approach as the main method to systematically examine the application of open learning technology and hybrid

learning education policies at the elementary school level. The literature study method was chosen because it allows researchers to identify, analyze, and synthesize the results of previous research that are relevant in answering the problems raised, without collecting primary data. This literature study aims to lay a conceptual foundation and empirical practice regarding the development and challenges of technology-based learning in elementary schools. The data collection procedure was carried out through searching for scientific articles on the Google Scholar database with keywords such as “open learning technology,” “hybrid learning in primary schools,” “digital education policy,” and “elementary education online learning.”

The articles used were selected based on inclusion criteria, namely: relevant to the focus of the study on elementary schools, based on empirical research or in-depth theoretical review, and available in full-text versions. From the results of the initial screening of more than 70 publications, as many as 12 articles were selected as the main sources for in-depth analysis. The data analysis technique used in this study is thematic analysis, which is by identifying key themes that emerge from the literature such as open learning technology implementation models, barriers to the implementation of hybrid learning, the role of teachers and parents, and relevant education policies. Each article is analyzed for its content and methods to assess its validity, contribution, and relevance to the context of basic education in Indonesia and globally. The identified results are then grouped into several major themes to be presented in an integrated manner in the results and discussion sections.

To improve the reliability of the findings, a literature triangulation strategy was used by comparing results from different sources and contexts. This approach

allows for stronger and more applicable conclusions, especially in recommending strategies for the implementation of open learning and hybrid learning technologies in elementary schools. The limitations of this study include that it does not include primary data or direct field tests, so the results are theoretical and require further verification in applied research. Nonetheless, this literature study is expected to make an important contribution to policy makers, education practitioners, and researchers in developing an inclusive and effective digital learning system in the primary education environment.

4. Results and Discussion

The application of open learning technology and hybrid learning policies in elementary schools is a form of adaptation to changes in the educational paradigm in the digital era. Findings from various studies show that the integration of digital technology in primary education has increased significantly since the onset of the COVID-19 pandemic, which forced educational institutions to implement distance learning suddenly and widely. In this situation, open learning technology is the main solution that allows the continuity of the teaching and learning process. Platforms such as Google Classroom, Zoom, and various Learning Management Systems (LMS) are essential infrastructure used by teachers and students. A study by Basilaia and Kvavadze (2020) confirms that the transition to an online system occurs massively and quickly, although it is not always accompanied by readiness from all parties, especially at the basic education level which has its own complexity. In the context of basic education, the characteristics of students who are still in the early

stages of development make technology-based learning a challenge in itself. Elementary school-age children have limitations in reading skills, understand complex instructions, and manage time independently.

Therefore, the success of open learning technology is not only determined by the availability of digital platforms, but also the extent to which the technology is able to adapt to the needs and abilities of students. Marbun (2021) highlights that an effective open learning approach must provide content that is easily accessible, visually presented, and able to engage students. The use of learning videos, animations, and interactive quizzes is a method that can increase student involvement in the online learning process. However, technology cannot completely replace the role of teachers, especially when it comes to building educational relationships and providing direct guidance. Teachers remain the main facilitators who translate digital materials into meaningful learning experiences. Gómez-García et al. (2021) stated that the use of technology in learning should be assistive, that is, it supports the learning process, not replacing the main pedagogical component. Therefore, teachers' digital skills are a key factor in the successful implementation of technology-based learning. In many cases, teachers who have good technological competence are able to develop engaging and contextual learning content according to the cognitive level of elementary school students.

The literature also reveals that the implementation of hybrid learning in elementary schools is an effective strategy to bridge the need for face-to-face learning and the flexibility of online learning. Hybrid learning provides space for students to learn independently from home, while still receiving direct guidance from

teachers at school. This model is particularly relevant in post-pandemic situations, where the need for adaptive and disruptive-resistant learning is becoming increasingly important. Hybrid learning a future learning model that is flexible, scalable, and can be adjusted to the needs of each educational unit. However, the implementation of hybrid learning is not free from challenges.

Studies by Purwanto (2020) and Putra et al. (2020) identified that the digital divide is a serious issue, especially in remote and infrastructure-poor areas. Not all students have access to digital devices and a stable internet network. This condition causes inequality in the learning process which has a direct impact on students' academic achievement. In addition, many teachers at the elementary level have not fully mastered the use of learning technology, so often the material delivered online is less interesting and not interactive. Agung et al. (2020) show that most teachers still need intensive training in designing effective and fun digital-based learning. In addition to the teacher and technology factors, the role of parents in the hybrid learning process is very important. Elementary school students who study online need assistance and motivation from parents to be able to participate in learning activities well. However, the reality on the ground shows that not all parents have the capacity, time, or technology skills to support their children learning from home. This is an additional challenge in the implementation of hybrid learning. Therefore, parental involvement needs to be facilitated through intensive training, mentoring, and communication between the school and the family.

According to Whalen (2020), parental involvement in children's digital education is a determining factor for the success of online learning, especially at the

elementary education level. In terms of policy, government support in providing digital education regulations and infrastructure is very important. The Indonesian government has launched various policies such as the Rumah Belajar platform and the Merdeka Belajar program which aims to encourage the digitalization of education. However, the effectiveness of these policies is highly dependent on implementation on the ground. Hwang et al. (2021) emphasize that good policies should be accompanied by budget support, training, and clear evaluation mechanisms. In many cases, the implementation of digital education policies is still sporadic and uneven. Schools in urban areas tend to be better prepared than schools in rural areas. This shows the need for a more inclusive and sensitive policy approach to disparities between regions. The strategy of optimizing hybrid learning at the elementary school level needs to be carried out holistically and sustainably. One effective approach is hands-on practice-based teacher training. Teacher training in the digital context must be contextual, interactive, and based on real needs in the field.

In addition, curriculum adjustments are an important aspect so that hybrid learning remains oriented towards the achievement of competencies and character development of students. The Project-Based Learning approach is one of the models that is suitable to be applied in a hybrid context because it allows students to learn through exploration and problem-solving independently or in groups, both online and offline. In the context of implementation in schools, the leadership of the principal is an important element in encouraging innovation. Principals who have a digital vision and transformational leadership tend to be more successful in

developing a technology-based learning ecosystem. Schools that have strong managerial support can create a learning culture that is adaptive to technological changes. In addition, schools need to collaborate with external parties such as the community, training institutions, and technology providers to strengthen internal and external capacities in implementing hybrid learning.

The results of this literature review show that the successful implementation of open learning technology and hybrid learning in elementary schools is highly dependent on three main components, namely the readiness of human resources (teachers, principals, and parents), comprehensive policy support, and the availability of adequate digital infrastructure. These three components must run synergistically so that learning transformation can run optimally. In addition, it is also important to pay attention to the local context and characteristics of students in designing a hybrid learning model. There is no single approach that can be applied uniformly; Every school needs to develop a strategy that suits the conditions and challenges they face. Overall, the results and discussions in this study confirm that open learning technologies and hybrid learning are not just a trend, but a long-term need in a sustainable primary education system. Therefore, all stakeholders in education, both at the central and regional levels, must work together to ensure that the transition to this new learning model is not only reactive, but also transformative, inclusive, and empowering for all students in Indonesia.

5. Conclusion

The application of open learning technology and hybrid learning education policies in elementary schools is a strategic step in answering educational challenges in the digital era. Open learning technology provides a great opportunity to improve access, flexibility, and personalization of learning for elementary students. However, the effectiveness of its implementation is highly dependent on the readiness of infrastructure, teacher competence, and support from parents and the school community. Education policies that support the hybrid learning model must be designed holistically, including aspects of regulation, curriculum, teacher training, and equitable digital access. The implementation of hybrid learning in elementary school requires a contextual and sensitive approach to the characteristics of child development. Technological support must complement, not replace, the pedagogical role of teachers. Challenges such as limited infrastructure, low digital literacy of teachers, and parental involvement need to be addressed through collaborative strategies and inclusive policy interventions. Ongoing training for teachers, the development of engaging learning content, and strengthening collaboration between schools and families are key to the success of hybrid learning in elementary schools. Thus, the application of open learning technology and hybrid learning can be the foundation for a more adaptive, inclusive, and sustainable transformation of basic education in the future.

References

- Agung, A. S. N., Surtikanti, M. W., & Quinones, C. A. (2020). Students' perception of online learning during COVID-19 pandemic: A case study on the English students of STKIP Pamane Talino. *SOSHUM: Jurnal Sosial Dan Humaniora*, 10(2), 225-235.
- Anugrahana, A. (2020). Hambatan, solusi dan harapan: pembelajaran daring selama masa pandemi covid-19 oleh guru sekolah dasar. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, 10(3), 282-289.
- Basilaia, G., & Kvavadze, D. (2020). Transition to online education in schools during a SARS-CoV-2 coronavirus (COVID-19) pandemic in Georgia. *Pedagogical Research*, 5(4).
- Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of educational technology systems*, 49(1), 5-22.
- Gómez-García, G., Hinojo-Lucena, F. J., Alonso-García, S., & Romero-Rodríguez, J. M. (2021). Mobile learning in pre-service teacher education: perceived usefulness of AR technology in primary education. *Education Sciences*, 11(6), 275.
- Hwang, G. J., Xie, H., Wah, B. W., & Gašević, D. (2020). Vision, challenges, roles and research issues of Artificial Intelligence in Education. *Computers and Education: Artificial Intelligence*, 1, 100001.
- Marbun, P. (2021). Disain pembelajaran online pada era dan pasca covid-19. *CSRID (Computer Science research and its development journal)*, 12(2), 129-142.

- Nikolopoulou, K., Gialamas, V., Lavidas, K., & Komis, V. (2021). Teachers' readiness to adopt mobile learning in classrooms: A study in Greece. *Technology, Knowledge and Learning*, 26(1), 53-77.
- Purwanto, A. (2020). COVID-19 pandemic and home online learning system: Does it affect the quality of pharmacy school learning?. *Sys Rev Pharm*, 11(8), 524-530.
- Putra, P., Liriwati, F. Y., Tahrim, T., Syafrudin, S., Suhono, S., & Aslan, A. (2020). The students learning from home experiences during Covid-19 school closures policy in Indonesia. *Jurnal Iqra': Kajian Ilmu Pendidikan*, 5(2), 30-42.
- Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2020). Online university teaching during and after the Covid-19 crisis: Refocusing teacher presence and learning activity. *Postdigital science and education*, 2(3), 923-945.
- Whalen, J. (2020). Should teachers be trained in emergency remote teaching? Lessons learned from the COVID-19 pandemic. *Journal of technology and teacher education*, 28(2), 189-199.