

Digital Education in Indonesia: Implementation of Telkomsel's CSR Program Through the Lombok Cluster Skul.id Application

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Abstract: Digital education plays a crucial role in the modern era, along with the rapid advancement of technology and the need for digital competencies in various sectors. In Lombok, educational challenges include limited internet access, lack of online learning infrastructure, low quality and competence of teachers in the use of digital media, and lack of continuous training. To answer these problems, Telkomsel initiated the Corporate Social Responsibility (CSR) program through the Skul.id application with the main goal of improving access and quality of digital education, as well as empowering teachers and students on the island of Lombok. The method of implementing community service includes intensive training for teachers on the use of Skul.id platforms, technical and pedagogical assistance, provision of hardware and connectivity, and periodic monitoring and evaluation to ensure sustainability. It is hoped that this program can improve students' literacy and digital skills, improve teachers' teaching methods, and create a learning ecosystem that is inclusive and adaptive to technological developments. Potential impacts include increasing learning motivation, equitable distribution of educational opportunities, and strengthening collaboration between schools, communities, and the digital industry. The success of this program is also expected to be a replication model for similar initiatives in other regions of Indonesia.

Keywords: Digital Education, CSR, Telkomsel, Skul.id, Lombok, Community Service.

Introduction

Digital transformation has become a fundamental force that is changing the educational landscape around the world. Globally, advances in information and communication technology are driving the adoption of online learning platforms (e-learning), open learning resources, and learning management systems that allow education to be accessed without geographical boundaries. This shift is further accelerated by the global pandemic, which has forced educational institutions to adapt to remote and hybrid learning models (Ummah & Fiqry, 2021).

At the national level, Indonesia is responding to this dynamic by launching various policies that support the digitalization of education. Through the Merdeka Learning framework, the government encourages the

use of technology to create more personalized and interactive learning (Ministry of Education and Culture, 2020). Programs such as school digitalization and strengthening technology infrastructure are priorities to ensure that the national education system can adapt to the demands of the times and prepare a generation that is ready to face the Golden Indonesia era 2045 (Ummah & Fiqry, 2021).

Digital education plays a crucial role in improving the quality of human resources (HR). Its function goes beyond simply transferring media from conventional to digital, but fundamentally enriches the learning process. Through technology, access to the latest and diverse learning materials from all over the world has become wide open. Further, digital education allows for personalized learning, where the material and learning pace can be tailored to each student's unique needs. The

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model also facilitates collaboration and communication, training 21st-century skills such as critical thinking, problem-solving, and digital literacy that are essential to compete in the global job market and drive innovation (Bradley, 2020).

Despite its great potential, the implementation of digital education in Indonesia is faced with a number of significant challenges. The main challenge is the digital infrastructure gap between urban and rural areas or 3T (Disadvantaged, Frontier, and Outermost) areas (Firinta Togatorop et al., 2022). Limited stable internet access, uneven device ownership, and varying levels of digital literacy among educators and students are major obstacles. Additionally, budget constraints often make it difficult for schools to invest in technology and its maintenance. On the other hand, there are great opportunities that can be optimized. The expansion of telecommunication networks by the government and mobile operators continues, including in difficult areas such as West Nusa Tenggara. In addition, increasing Corporate Social Responsibility (CSR) initiatives from the private sector and collaboration between governments, companies, and communities pave the way for the provision of quality digital tools, training, and content (Dudoignon, 2021).

The island of Lombok, part of West Nusa Tenggara Province, has diverse regional characteristics, ranging from coastal to mountainous, with an economy that is heavily supported by the tourism, agriculture, and fisheries sectors. Demographically, the island faces challenges in human resource development, which is reflected in the Human Development Index (HDI) figures in most of its districts which are still below the national average. For example, in 2024, the HDI of North Lombok Regency will be recorded at 67.24, Central Lombok 69.17, and East Lombok 69.23, while Mataram City as the administrative center will reach 80.60 (Central Statistics Agency, 2024). The condition of education on Lombok Island shows a disparity. Although access to ICT and internet in urban centers such as Mataram is quite high, many schools in other regions, especially in rural and remote areas, still face access difficulties. Reliance on mobile networks whose signals are not always stable is an obstacle to the implementation of effective digital learning.

In the midst of the demands of adapting education to the digital era, the need for an efficient and effective Learning Management System (LMS) is crucial (Bradley, 2020). Responding to these challenges, telecommunication company Telkomsel, through its Corporate Social Responsibility (CSR) program, launched various initiatives to support the digital education ecosystem in Indonesia. One tangible manifestation of this commitment is the development of the Skul.id platform, an application designed to digitize

various aspects of school activities, ranging from administration, teaching and learning activities, to communication between teachers, students, and parents. This application provides various features such as online attendance, virtual classes, assignment and grade management, e-report cards, and learning materials in the form of articles and e-books that can be accessed for free by schools that use the Telkomsel network (Moya et al., 2024). This community service activity focuses on the implementation of Telkomsel's CSR program through socialization and assistance in the use of Skul.id applications in schools in the Lombok cluster area.

The goal of the program is to introduce and integrate Skul.id digital platforms into the school ecosystem to improve administrative efficiency and enrich the teaching and learning experience (Indriani et al., 2025). Through this service journal, it will be explained in detail about the program implementation process, school community participation, challenges faced, and the positive impact of the implementation of the Skul.id application as a solution in accelerating the transformation of digital education in Lombok. So the purpose of this community service activity is to implement Telkomsel's CSR program through the Skul.id application in the Lombok cluster to increase public awareness about the importance of digital education and increase public access to digital learning resources. partner needs and can provide sustainable solutions. The implementation of the program is divided into four main stages that are systematic and structured, namely: program socialization, technical training, facilitation of supporting facilities, and monitoring and evaluation.

Method

This community service activity is carried out using the Participatory Action Research (PAR) approach, where the implementation team actively collaborates with partners (teachers, students, and schools) in each stage of the activity. This method was chosen to ensure that the program is truly in line with the needs of the partner and can provide sustainable solutions. The implementation of the program is divided into four main stages that are systematic and structured, namely: program socialization, technical training, facilitation of supporting facilities, and monitoring and evaluation.

This first phase aims to introduce the service program and the benefits of the Skul.id application as a digital learning platform to the school community in the Lombok cluster. After the initial understanding is formed through socialization, the next stage is in-depth

technical training. This training is designed to equip teachers and students with practical skills in operating Skul.id applications. The third stage is the provision of internet access and digital devices at this stage is an affirmative action to overcome the digital access gap which is one of the main obstacles in the implementation of online learning. The monitoring and evaluation stage is carried out periodically during and after the program to measure effectiveness, identify challenges, and ensure the sustainability of the program.

Result and Discussion

The implementation of Telkomsel's Corporate Social Responsibility (CSR) program through the Skul.id application in the Lombok Cluster is part of the national initiative "Telkomsel Jaga Cita" (Lombok Tribune, 2024). This umbrella program aims to strengthen an inclusive, adaptive, and sustainable digital education ecosystem throughout Indonesia by utilizing various digital platforms, including Skul.id. Skul.id is a digitalization platform for the school ecosystem related to all administration and teaching and learning activities, which Skul.id can facilitate the learning process both face-to-face and remotely.

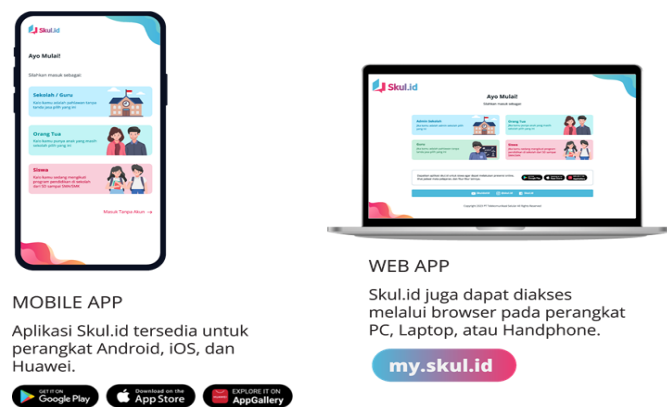


Figure 1. Application & Website Skul.id

The Skul.id application provides solutions to schools with features needed in the educational ecosystem, the excellent features contained in the Skul.id application are attendance, Quizzes (my assignment), Chat, and Learning Management System (LMS) (Dudoignon, 2021).

All of these features can be freely accessed by all stakeholders in the school, namely teachers, students, parents, and schools, thus strengthening collaboration and the effectiveness of the teaching and learning process. Thus, Skul.id become a complete and practical digital platform to support the transformation of education towards the digital era. In Telkomsel's Corporate Social Responsibility (CSR) program through the Skul.id application, there are several stages of

implementation that are implemented, especially in the Lombok Cluster, which are as follows:

In the initial stage, the socialization of the program was carried out to various stakeholders, including schools, local governments, and educational organizations. Intensive coordination is carried out to ensure that all parties understand the goals and benefits of the program as well as their respective roles in its implementation.

After socialization, the program was officially launched in the Lombok Cluster area. At the same time, training was carried out for teachers and school staff on the use of Skul.id applications so that they could operate digital features optimally in the learning process and school administration.

This stage involves the limited implementation of Skul.id applications in several schools as a pilot project. This implementation aims to test technical and operational readiness, as well as identify obstacles that may arise before it is extended to other schools.

During and after implementation, regular assistance is provided to help schools overcome technical and operational problems. Technical support is also provided to ensure that the app runs smoothly and users can maximize their functions.

The final stage includes ongoing monitoring of application usage and evaluation of program effectiveness. Data and feedback are collected to assess the achievement of goals, identify areas for improvement, and formulate recommendations for future program development.

The supporting factors of the Skul.id Program in the Lombok Cluster are the main foundation in the sustainability of skul.id, including:

Telkomsel's strong commitment is the main pillar of the successful implementation of Skul.id. Telkomsel not only allocates significant resources, but also develops relevant technology and runs Corporate Social Responsibility (CSR) programs in a sustainable manner. This support creates a solid foundation for the development and maintenance of Skul.id applications, while ensuring the long-term sustainability of the program.

Support from local governments and local educational organizations strengthens the legitimacy and effectiveness of the program. This collaboration facilitates the socialization process, coordination between stakeholders, and the provision of supporting facilities in schools. This synergy between the public and private sectors allows for the implementation of programs that are more integrated and responsive to local needs.

The urgent need for the digitization of learning processes and school administration in the Lombok Cluster is the main driving factor for the adoption of

Skul.id. This digitalization provides various significant benefits, including increasing educational accessibility through internet connectivity that allows students to access learning resources flexibly from various locations and times. In addition, learning becomes more interactive and engaging with the integration of educational videos, simulations, and gamification, which has been empirically proven to improve students' understanding of concepts and participation. Digitalization also contributes to the improvement of students' digital skills as well as the efficiency and effectiveness of the learning and administrative process, where teachers can easily create, share materials, assign assignments, and monitor learning progress through online platforms.

Overall, the combination of institutional commitment, multi-stakeholder collaboration, real digitalization needs, complete and innovative application features, and adequate network infrastructure support are key factors that support the success of the Skul.id program in the Lombok Cluster.

After discussing the various factors that support the success of a program, it is also important to highlight a number of inhibiting factors that can be challenges in achieving it. By understanding these two sides, we can get a more comprehensive picture of the dynamics that occur.

Based on a survey conducted by the Central Statistics Agency (BPS) in 2022, the illiteracy rate in West Nusa Tenggara Province reached 11.03% in 2022, while West Nusa Tenggara province was ranked second highest after Papua (Moya et al., 2024). The illiteracy rate is defined as the percentage of the adult population who are unable to read and write to the total adult population, therefore the high percentage of illiteracy in West Nusa Tenggara Province is a bad sign of the low level of literacy of the people in NTB (Moya et al., 2024).

With the relatively low level of public literacy in West Nusa Tenggara, it is in line with the low level of digital literacy in West Nusa Tenggara even though in the capital city of West Nusa Tenggara, namely Mataram City, the level of digital literacy of the community is quite high compared to other areas on the island of Lombok. However, this shows the balance of the digital literacy ability of the people on the island of Lombok.

The variation in digital literacy skills among teachers and students is one of the main obstacles in the implementation of Skul.id. Some teachers and students have a fairly good understanding and technology skills, but not a few still have difficulty operating digital applications effectively. This disparity in literacy levels causes the application process to be suboptimal, sometimes even causing confusion and frustration. This also affects the speed of adaptation to new features in the

app, so the program cannot run as expected evenly across the school.

The availability of adequate technological devices such as computers, laptops, tablets, or smartphones is a significant obstacle in several schools and students. Not all schools have sufficient device facilities to support digital learning, especially in rural or remote areas. Likewise with students, there are those who do not have a personal device to access Skul.id application regularly. These limitations limit access to and active participation in digital learning, thereby hampering the effectiveness of the program.

The implementation of digital learning through Skul.id demands changes in culture and habits in the school environment. Teachers, students, and parents must adapt to different learning methods than traditional, including the use of technology in the teaching and learning process and administration. This change in mindset and habits is not easy to do in a short time because it involves psychological, social, and technical aspects and resistance to change, discomfort with new technologies, and lack of motivation to innovate are challenges that must be faced for digital transformation to be successful.

Even though training has been provided, there are still a number of educators who lack adequate digital skills to make the most of Skul.id applications. These limitations include the ability to operate applications, integrate technology in learning methods, and manage digital content effectively. This lack of skills can hinder the digital learning process and reduce the potential benefits that can be gained from using apps. Therefore, continuous teacher capacity building is very important.

These inhibiting factors suggest that the successful implementation of Skul.id program is not only dependent on technology and infrastructure, but is also heavily influenced by the human resource and cultural aspects of the school. Therefore, a comprehensive handling strategy is needed to overcome these obstacles so that the program can run optimally and have a positive impact on education in the Lombok Island Cluster.

In order for Skul.id program to run optimally and have a positive impact on education in the Lombok Island Cluster, a comprehensive and sustainable handling strategy is needed. This strategy includes continuous intensive training and mentoring to improve the digital literacy and skills of teachers and school staff, starting from the introduction of the basics of using applications to the ability to manage digital content and the integration of technology in learning. Direct assistance at school is also important to help teachers overcome technical obstacles and increase confidence in using Skul.id.

In addition, multi-stakeholder collaboration between Telkomsel, local governments, schools, and communities is key in supporting the provision of technology infrastructure, training, and program monitoring on an ongoing basis. This collaboration opens up opportunities for additional funding, provision of tools, and policy support that facilitates the implementation of programs at various levels of education. The provision of adequate technological devices such as computers, tablets, or smartphones for schools and students in need is also very important, accompanied by strengthening internet network infrastructure in remote areas so that access to Skul.id applications can run smoothly without obstacles (Lombok Tribune, 2024).

To change traditional learning culture to be more adaptive to technology, educational campaigns involving teachers, students, and parents through workshops, seminars, and regular socialization need to be carried out to increase awareness of the benefits of digital learning and reduce resistance to change. In addition, the development of user-friendly content and application features is the main focus so that the application is easy to use by all groups, including those with low digital literacy, while adding relevant and interesting learning content to increase user interest. The formation of a digital teacher community that actively shares experiences, tips, and solutions related to the use of Skul.id can strengthen the capacity of educators collectively and become an effective mentoring and peer support media.

Finally, regular monitoring and evaluation are essential to identify obstacles, measure program effectiveness, and make quick improvements, as well as be the basis for strategic decision-making in future program development. With this strategy, it is hoped that Skul.id program can run smoothly and make a significant contribution to improving the quality of education on the island of Lombok.

The program Skul.id continues to conduct various evaluations to maximize implementation in the field. These efforts include improving the quality of training, strengthening collaboration with various parties, and developing application features that are more responsive to the needs of users in the Lombok Cluster. Until 2025, Skul.id program in the Lombok Cluster has successfully signed a Memorandum of Understanding (MoU) and registered as many as 135 schools from various levels of education, ranging from Elementary Schools (SD), Junior High Schools/Madrasah Tsanawiyah (SMP/MTS), Senior High Schools/Madrasah Aliyah (SMA/MA), to Islamic Boarding Schools. This success shows the enthusiasm and readiness of educational institutions in the region to adopt digital transformation in learning. In Mataram

City, there are three schools that have registered or registered for Skul.id program, namely SMPN 11 Mataram, SMKN 3 Mataram, and SMAN 9 Mataram.



Figure 2. Trial Activities of Skul.id Application at SMAN 9 Mataram

Of the three schools, SMAN 9 Mataram was chosen as a reference school for the implementation of the Skul.id program in this city. As a reference school, SMAN 9 Mataram plays an important role in becoming a model of best practices, a training place for teachers from other schools, and a center for the development of innovation in the use of Skul.id applications. With these efforts and achievements, the Skul.id program in the Lombok Cluster continues to move forward to realize inclusive, adaptive, and sustainable digital education, in line with the big vision of Telkomsel's CSR program.

Telkomsel through its educational platform Skul.id committed to providing innovative solutions for the world of education. Skul.id is a digital platform for educators and students. Skul.id provides a variety of application features that support the digital learning process, such as virtual classroom management, online attendance, and assignment and grade management. Skul.id provides various training and assistance to improve teachers' skills in using Digital Technology through intensive training and mentoring so that teachers are able to improve digital skills. With this training, it can improve the competence of educators and strengthen teachers' capacity in integrating technology into teaching methods, so that learning becomes more effective and interactive.

Telkomsel has a great commitment to supporting efforts to improve teacher competence and the use of technology in the world of education, one of which is by collaborating between Telkomsel and the Indonesian Teachers Association (IGI) which aims to improve teachers' pedagogic competence which leads to the quality of student learning, increase teacher knowledge in developing deep learning approaches, and provide innovative deep learning for students. Telkomsel also

provides benefits for participating schools in the form of E-Learning Materials from Kuncie and a benefit of 2GB/1 Rupiah for students who use the BY card. U with certain conditions, as well as technical support for the use of the platform Skul.id (Telkomsel, 2020).



Figure 3. Collaboration between Telkomsel and the Indonesian Teachers Association (IGI)

With this program, Telkomsel has succeeded in building digital literacy awareness for more than 1,000 students and teachers in Indonesia by providing training in the form of seminars, workshop and boothcamp Intensive related to the latest trends and challenges in the digital creative world, to digital creative skills to improve and support the development of knowledge, insight, and creativity. In addition, the Skul.id Program has succeeded in improving the digital skills of 2,515 teachers on the island of Lombok.

With the presence of Skul.id application, students get access to virtual classes and digital learning materials that are more interesting and varied. Interactive features and ease of access to materials encourage students to participate more actively in the learning process. In addition, the use of technology in learning increases students' motivation because they can learn flexibly and according to their respective learning styles (Radar Lombok, 2024). Skul.id also provides a variety of learning materials in the form of articles, e-books, and other digital learning resources that can be accessed at any time by teachers and students. This contributes to increasing students' interest in learning and involvement in Lombok Cluster schools.

In addition, Telkomsel's extensive and stable network infrastructure support in the Lombok area ensures adequate internet access to make optimal use of this digital learning resource. Thus, this program overcomes limited access to information and expands learning opportunities for students in remote and urban areas in the Lombok Cluster.

Thus, the Skul.id program not only improves teachers' abilities in digital technology, but also significantly increases students' interest in learning and expands access to digital learning resources, thereby supporting the transformation of digital education in the Lombok Cluster.

Telkomsel's Corporate Social Responsibility (CSR) program through the Skul.id application has been running from 2023 to 2025 with the main goal of supporting the transformation of digital education in the Lombok Cluster area. This program is designed to accelerate the digitization of the learning process and school administration to improve the overall quality of education.

At the beginning of its launch, the target of the Skul.id program in the Lombok Cluster was only targeting 20 schools as the initial stage of implementation. However, until 2025, this program has succeeded in expanding its scope significantly by inviting 135 schools from various levels of education to join and sign a Memorandum of Understanding (MoU). This shows a remarkable increase in participation and positive acceptance from educational institutions in the region.

In addition, the number of users registered in the Skul.id application also reached 4,463 people, which included teachers, students, and parents. The productivity of using this application can be seen from the eight schools that have actively used the platform optimally, with SMAN 9 Mataram as a pilot school that started using the application from June 11, 2025.



Figure 4. Trial of Skul.id Application at SMAN 9 Mataram with Principal & Teacher

Based on the results of the interview with the Principal of SMAN 9 Mataram, Skul.id program has run effectively and has had a real positive impact. This application facilitates school administration, such as attendance management, assignment collection, and communication between teachers, students, and parents. With its complete and easy-to-use features, Skul.id reduce reliance on manual administration and paper usage, thus contributing to cost efficiency and environmental friendliness.

In addition, this application facilitates more intensive interaction between teachers and parents without the need to meet face-to-face, making communication more flexible and fast. Students also get the convenience of accessing learning materials and participating in classroom activities online, allowing

them to learn anytime and anywhere. These changes show that classroom learning practices are starting to transform towards a more digital and collaborative model.

Quantitatively, the achievement of 135 schools that joined far exceeded the initial target of 20 schools, indicating the success of the program in expanding the reach and increasing the adoption of educational technology in the Lombok Cluster. The number of users reaching thousands also reflects a high level of participation and potential for a broad impact on the educational community.

Qualitatively, testimonials from pilot schools such as SMAN 9 Mataram show that Skul.id application is not just a digital tool, but also a practical solution that improves the efficiency of administration, communication, and the learning process. This indicates that the program's goal of encouraging digital education transformation has begun to be realized significantly.

Therefore, Telkomsel's CSR program through Skul.id in the Lombok Cluster has proven to be effective in achieving the goal of digital education transformation. With significant expansion of coverage, positive changes in learning behaviors and practices, and tangible benefits felt by schools, the program shows promising success. In the future, sustainable development and mentoring will be key to maintaining and increasing the positive impact of programs in the region.

Conclusion

This community service shows that Telkomsel's Corporate Social Responsibility (CSR) program through the implementation of the Skul.id application in the Lombok cluster has been successfully implemented. This program aims to improve the quality of education in Indonesia by expanding public access to digital learning resources. Key findings indicate the potential of Skul.id in supporting digital learning processes in the region. The program development suggestions identified are the need for regular monitoring and evaluation to ensure the long-term sustainability and effectiveness of the program.

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