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Al Ibtida

## Analysis of the Students' Digital Literacy Skills through Blended Learning at *Madrasah Ibtidaiyah* in the Post Covid-19 Pandemic

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### Abstract

The purpose of this study was to analyze how blended learning could enhance the students' digital literacy skills. The mix of methodologies employed in this study was based on the sequential transformative strategy paradigm. Participants in this study were 7 teachers and 80 students from three *Madrasah Ibtidaiyah* located in Cirebon City, West Java, Indonesia. The data for this study were gathered using both qualitative and quantitative methods, including interviews, observations, triangulation, documentation, and questionnaires. Then, both qualitative and quantitative techniques were used to analyze the data. The findings revealed that the teachers had utilized blended learning stages according to the six existing criteria. However, not all schools had implemented the same blended learning concept. According to the quantitative data, 74.1% of students said their teachers had successfully used blended learning on average. Additionally, a simple linear regression calculation with a significant value of  $0.000 < 0.05$  was used to support the hypothesis that the utilization of blended learning affected the students' digital literacy skills.

Keywords: *digital literacy, blended learning, madrasah ibtidaiyah students.*

### Abstrak

Penelitian ini bertujuan untuk menganalisis bagaimana *blended learning* dapat meningkatkan kemampuan literasi digital siswa. Perpaduan metodologi yang digunakan dalam penelitian ini didasarkan pada paradigma strategi transformatif sekuensial. Partisipan dalam penelitian ini adalah 7 guru dan 80 siswa dari 3 Madrasah Ibtidaiyah yang ada di Kota Cirebon, Jawa Barat, Indonesia. Data penelitian ini dikumpulkan dengan menggunakan metode kualitatif dan kuantitatif, meliputi wawancara, observasi, triangulasi, dokumentasi, dan angket. Kemudian, teknik kualitatif dan kuantitatif digunakan untuk menganalisis data. Hasil penelitian mengungkapkan bahwa guru Madrasah Ibtidaiyah di Kota Cirebon, Jawa Barat telah memanfaatkan tahapan *blended learning* sesuai dengan 6 (enam) kriteria yang ada. Namun demikian, tidak semua sekolah menerapkan konsep *blended learning* yang

sama. Menurut data kuantitatif, 74,1% siswa mengatakan bahwa guru mereka telah berhasil menggunakan blended learning. Selain itu, perhitungan regresi linier sederhana dengan nilai signifikansi  $0,000 < 0,05$  digunakan untuk mendukung hipotesis bahwa pemanfaatan blended learning berpengaruh terhadap kemampuan literasi digital siswa.

Kata kunci: *literasi digital, blended learning, siswa madrasah ibtidaiyah.*

## INTRODUCTION

In recent times, digital literacy is one of the skills that have to be possessed by students. The existence of digital technology can help assist the today's generation in obtaining information and understanding without problems (Ardi et al., 2019; Hidayat et al., 2018). It also facilitates long-distance verbal exchange and becomes one of the media that supports the learning process (Zheng et al., 2017). Technology is becoming important and cannot be prevented, along with the development of android era and computers. Everyone has their own skills in managing the available technological facilities. However, not everybody can use digital technology without adequate education and understanding, especially for young children. If properly managed, early exposure to technology can allow children to hone their digital literacy skills, and utilize virtual environments to their fullest potential, known as virtual literacy (Daharnis et al., 2018; Taufik et al., 2018).

Children must be able to perceive and generate new information and knowledge. Then, they can apply it using digital sources in order to live in the digital age (Mohammadyari & Singh, 2015; Prior et al., 2016). That virtual literacy should be incorporated into the procedure for teaching and learning is the agreement of experts and policy makers. Children can learn in a pleasant way by developing their virtual literacy with the help of adults, which can have a significant impact (Katterfeldt et al., 2016). If children are digital literate, they can more easily learn and develop their language, cognition, social emotion, physical development, motoric skills, ethics, and religious principles. "Digital literacy" is the capacity to comprehend, access, modify, integrate, assess, and synthesize digital resources using the right virtual resources and tools (Gallardo-Echenique et al., 2015; Ifdil et al., 2018; Rangka et al., 2018).

Of course, in the age of the fourth industrial revolution, having this degree of digital literacy is essential, especially during the Covid-19 pandemic that affects the educational system. Digital learning has replaced the role of traditional classroom instruction (Aji et al., 2020; Mansyur, 2020). As a result of the pandemic, the face-to-face learning system has been suspended until the implementation of the digital system. Naturally, the transition to digital-based learning requires the students to have digital literacy skills. Indonesia is ranked 74th out of 79 countries participating in PISA and ranked 45th out of 50 countries participating in TIMSS (Hawa & Putra, 2018). The results of the PISA and TIMSS surveys indicate that students' literacy abilities are still relatively low (Arikan et al., 2016; Sarwi et al., 2020). A study by the virtual literacy activist network (JAPELIDI) found that virtual literacy competencies in schools were still notably low (around 3.6%). If learning should be conducted entirely online, the children's limited digital literacy skills then should become a concern. To ensure that the objectives of national education can still be achieved, the government must act fast to adjust with the Covid-19 situation. Thus, the Indonesia's education system can still be well managed both during and after the pandemic. The government started to soften its online learning regulations in the odd semester of the new academic year 2021, limiting face-to-face

learning activities (Menteri, 2021). Of course, an effective learning model must be used both online and offline to implement this guideline. Blended learning is the instructional approach used (Ferdiansyah et al., 2021).

Both online learning and face-to-face learning are combined in blended learning. With this technique, the learning process involves the use of technology. In essence, the development of technology in the early twenty-first century endorses the implementation of such integrated learning methodology. However, due to the growing prominence of the Covid-19 case, this model has undergone significant examination and is now seen as an alternative learning paradigm in Indonesia. Blended learning can be used in primary schools if we pay attention to the students' web usage habits (Suhartono, 2017; Susanti & Prameswari, 2020). It demonstrates that although Indonesian students have developed their technical literacy, they have not developed thorough instruction beneficial to their study. Thus, blended learning has emerged as one of the models of instruction in the era after the Covid-19 pandemic. The utilization of blended learning has been the focus of numerous studies in the past (Dian et al., 2020; Suhartono, 2017).

Several studies have examined how the blended learning is implemented in primary schools. Having enough computers and internet access in the classroom is one of the most crucial components. Blended learning in the classroom can be implemented using online and offline techniques. Additionally, a number of relevant studies investigate how children's math and science literacy is impacted by blended learning (Aritonang & Safitri, 2021; Lestari, 2020; Saman et al., 2019). The impact of blended learning applications on the students' math and science literacy is the main subject of this discussion. According to Utami's research, blended learning has become a viable option to face-to-face instruction for instructors to use during the Covid-19 because it can promote student learning independence in the subject of mathematics (Budiyo, 2020; Sufia & Novita Lestari, 2020).

A study of students' digital literacy skills using school-based online learning concludes that although using school-based e-learning can help students develop their digital literacy skills, it is still not the best method (Pratama et al., 2019). Another study on the development of interactive media with healthy themes for increasing digital literacy has succeeded in creating interactive media able to arouse the students' enthusiasm for learning, with the digital literacy rate of 38% in just three meetings (Rahmah et al., 2021). In addition, a study on the use of e-learning to enhance the students' digital literacy skills in the new normal era has come to the conclusion that e-learning-based learning has a positive impact on the students' literacy abilities (Anggrasari, 2020).

Therefore, this study seeks to examine the students' digital literacy skills using blended learning in the post-Covid-19 pandemic, in contrast to several earlier studies. The focus of the study is to enhance the students' digital literacy skills after discussing the use of blended learning. In addition, this study also delves into the effects of learning that must be carried out during the current post-Covid-19 pandemic. The emphasis of the study is more on increasing the students' digital literacy skills. The researchers argue that, in order to find formulations that can be used within the framework of Islamic Education in an effort to synergize and support the government's agenda with regard to enhancing the students' literacy skills and post-pandemic preparedness, it is necessary to evaluate the students' level of digital literacy skills through blended learning.

## **METHODS**

This research employed the mixed methods research design. The basis for choosing this design was because it focused on the consequences of research centered on the fundamental research questions. The use of two methods to collect data was able to answer the problems studied. Thus, to be able to produce a comprehensive and thorough analysis of the problems, the model of mix methods research used in this research was the sequential transformative strategy. In this study, two stages of the research process were used. In the first stage, quantitative or qualitative methods were used. In the next stage, qualitative or quantitative methods were used. This research was carried out at three *Madrasah Ibtidaiyah* located in Cirebon City, West Java, Indonesia with a total of 87 participants consisting of 7 teachers and 80 fifth-grade students. The qualitative data were gathered from observations, documentation, and interviews. It was then analyzed using the Miles and Huberman model in the following stages: data collection through interviews with 7 teachers, data reduction, data exposure or data presentation, and finally, testing the validity of the data using the triangulation method.

Meanwhile, the quantitative data were obtained via documentation, and questionnaires sent to 80 fifth-grade students from the three schools. The questionnaire was equipped with a list of statements containing indicators of the implementation of blended learning, using a Likert scale with four possible answers: Strongly Agree (S), Agree (S), Disagree (TS), and Strongly Disagree (STS). Students could also demonstrate skills their digital literacy. There were 12 total statements for the implementation of combined learning, and there were 10 total statements for the students' digital literacy. By using the statistical analysis application of SPSS version 16, the statistics were examined for normality and homogeneity before being evaluated using a simple linear regression evaluation.  $H_0$  was rejected if the cost was high (2-tailed) 0.05, while  $H_0$  was accepted if the cost was large (2-tailed)  $> 0.05$ .

This research was carried out in class V at three *Madrasah Ibtidaiyah* in Cirebon City, West Java, Indonesia. The research was carried out on June 28, 2022, starting from the delivery of the research permit to schools to the implementation of research until August 10, 2022. The subjects of the research were the principal, deputy for curriculum, fifth-grade teachers, and fifth-grade students. There were six indicators associated with the implementation of blended learning to know to the way to enhance the students' virtual literacy capabilities in response to the Covid-19 pandemic. The six indicators were 1) determining the types and substances of coaching substances, 2) figuring out the mixed learning design used, 3) putting the online mastering format, 4) engaging in trials at the design made, 5) organizing mixed mastering properly, and 6) making ready criteria for evaluating the implementation of blended learning. The data were obtained through observations of several schools that applied blended learning during the Covid-19 period through several sources, both websites, participants, and visiting the school. The implementation of blended learning during the post-Covid-19 pandemic was then discussed via interviews with a number of participants, including the principal, deputy for curriculum, and fifth grade teachers. Then, as part of the documentation phase, the researchers compiled the records pertaining to the implementation of blended learning to support the information from observations and interviews.

## RESULTS AND DISCUSSION

Based on the findings from research carried out, the researchers found that the *Madrasah Ibtidaiyah* had carried out blended learning during the Covid-19 pandemic. It was evident from the planning, implementation, and evaluation activities. The activities implemented by the teachers included: choosing the subject matter and instructional materials to be used, designing blended learning, choosing online and offline learning formats, successfully implementing blended learning in class, and then evaluating the effectiveness of the implementation of blended learning to ensure whether the update was effective or not, especially during the Covid-19 period and in enhancing the students' digital literacy. The results of the questionnaire were then examined using a straightforward linear regression formula with the use of SPSS software to determine how blended learning affected by the students' digital literacy skills. The study's premise was that if the significance level was less than 0.05, blended learning had an impact on the students' ability to enhance their digital literacy. Here are the outcomes of the straightforward linear regression study.

Table 1. Simple Linear Regression Analysis

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	14.495	2.696		5.377	.000
Blended Learning	.452	.075	.585	6.041	.000

a. Dependent Variable: Digital Literacy

Based on Table 1, it was regarded that the significance cost was at 0.000, meaning that it was far less than 0.05 ( $0.000 < 0.05$ ). The B unstandardized coefficients cost was positive 0.452. It showed that blended learning had an effect in enhancing the students' digital literacy skills. It is regarded that digital technology performed a critical function in the digital technology. Consequently, there is a need to enhance the accessibility of virtual devices. It is also necessary to amplify opportunities for students to have access to better technology to create equality. It is also a problem of education in Indonesia, where the students' literacy remains lower than other countries. The government needs to improve the quality of education in by intensively enhancing the students' literacy skills. In this regard, reading literacy, numeracy literacy, technological know-how literacy, and digital literacy are all examples of literacy (Binasdevi et al., 2022; Effendi et al., 2021; Kaeophanuek et al., 2018).

The Covid-19 pandemic has impacted on the improvement of the students' digital literacy level in Indonesia more crucial than ever. It is because learning is now primarily done online, necessitating a comprehensive education in digital literacy. The use of blended learning is one of the many aspects that can be done to support online learning during the pandemic and post-pandemic and help students enhance their skills in digital literacy. It is done by selecting the digital media and the learning models that will be applied (Rachmadtullah et al., 2020). In this study, blended learning is used to analyze the students' digital literacy skills during the post-covid-19 pandemic. In this study, blended learning had already been implemented by the fifth-grade teachers and students in three schools in Cirebon City.

Based on the results of qualitative data collected from the participants at three *Madrasah Ibtidaiyah* Cirebon City, universal blended learning steps had been successfully implemented

in accordance with the recommendations on how blended learning should be used, particularly to enhance the students' digital literacy skills. In addition, the students' digital literacy skills also experienced a significant increase due to the implementation of blended learning. During blended learning, students became more technologically literate. They were able to access information from the internet and send assignments through the google classroom application for exchanging messages or files with friends. In addition, they were also able to make animated learning videos. The average percentage of student surveys relating to the implementation of blended learning was in the good category, with the number of percentages above 55%, according to quantitative data. With an average rate of over 70%, the student questionnaires that assessed students' digital literacy fell into the good category. Additionally, a simple linearity regression analysis's significance value was at 0.000, meaning that it was less than 0.05 ( $0.000 < 0.05$ ). The B unstandardized coefficients value was positive 0.452, indicating that blended learning significantly enhanced the students' digital literacy skills.

The role of instructors in processing active, imaginative, and enjoyable learning cannot be separated from efforts to enhance the students' digital literacy skills. Despite being hampered by the Covid-19 pandemic, teachers must be creative in packaging their learning in order to meet the intended goals. To address these issues, *Madrasah Ibtidaiyah* in Cirebon City employed blended learning strategies. This is also said by Wardani, et al (2018) that blended learning has its own appeal to use in the 21st century and the current era of revolution 4.0. Although blended learning still feels new to teachers, all efforts are made in order to benefit students and achieve learning goals as well. Based on the qualitative interview data, there are several obstacles in the application of blended learning including: 1) draining more teacher time, 2) lack of facilities and infrastructure that support learning, 3) limited internet access or quota owned by students, 4) difficulty controlling various websites accessed by students, 5) lack of understanding of teachers, students and parents regarding blended learning. This is also supported by research by Dwaik et al. (2016), Medina (2018), Fitri (2019) and Wang et al.(2020), which shows that implementing blended learning can be used to teach students how to improve their digital literacy. The implementation of this method necessitates careful planning, particularly in terms of the technology resources owned by schools and the teachers' and students' comprehension of its application.

## **CONCLUSION**

According to the study's findings, one way to enhance the Indonesian students' digital literacy skills during the post-Covid-19 pandemic is through the use of blended learning, which can be implemented adjusting to each school's curriculum and needs. One of the answers to the problems in today's digital environment is the utilization of blended learning, which also supports the students' digital literacy skills. Although adequate facilities and infrastructure are required for the implementation of blended learning, schools can reduce this demand by working together with parents and by encouraging teacher innovation in its implementation. This research is felt by the researchers to be far from perfect because of the limited research time. In order to improve the students' digital literacy skills, the researchers hope that more research will be done to look at how blended learning has developed in Indonesia.

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