

Digital Literature and Independent Learning in COVID-19 Pandemic: A Correlation Study

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Abstract

The purpose of this study is to determine the relationship between digital literacy and self-regulated learning during the COVID-19 pandemic for Hindu Indonesia University Denpasar students. The study used correlational quantitative method as the research method. The population of the study consists of all active students at the Hindu Indonesia University Denpasar. The study sample was selected employing probability sampling method. The proportional method of layered random sampling was used to select the study sample. A questionnaire method was used to collect the study data. The data analysis of this research used a correlation test and a simple regression test. The study findings revealed a significant positive relationship between digital literacy and independent learning during the pandemic. This is evidenced by: (1) the results of a simple correlation test show ($r_{count} = 0,478 > r_{table} = 0.1603$), and the significance value is less than 0.05 ($0.000 < 0.05$). (2) the equation model $Y = 22.414 + 0.425X$ is statistically significant with $t_{count} = 6.582 > t_{table} = 1.976$, and the significance value = $0.000 < 0.05$. (3) the coefficient of determination (R^2) is 22.9%, meaning that digital literacy variables affect 22.9% of self-regulated learning variables during the COVID-19 pandemic for students at the Hindu Indonesia University Denpasar.

Keywords: *Digital literacy, self-Regulated learning, COVID-19 pandemic*

Introduction

Since the end of December 2019, countries worldwide have been profoundly affected by the emergence of coronavirus disease-2019 (COVID-19). All countries, including Indonesia, have been trying to overcome the situation that is not controlled due to this outbreak, which has hampered all lines of life due to various policies to prevent the rapid spread of COVID-19, among others, by imposing social and physical restrictions, as well as remote working. There is a recommendation to work remotely based on the provisions of Article 86 paragraph (1) of Law Number 1 of 2003 concerning manpower which states that every worker/labor has the right to protection of occupational safety and health, which requires everyone to survive with the help of technology and the Internet.

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Controlling the situation during the COVID-19 pandemic by utilizing technology and the Internet in accordance with the characteristics of the Fourth Industrial Revolution (4IR), one of which is the Internet of things (IoT) that can control almost all jobs connected through an Internet connection (Risdianto, 2019). The hallmark of education during the 4IR is the use of the Internet (Tachie & Kariyana, 2022).

According to Risdianto (2019), one of the provisions in implementing education during the 4IR is the existence of connectivity or access to the Internet network. This is in line with the emergence of a digitalization education system through digital learning with the help of the Internet that can provide a more meaningful learning experience, grow various strategies, methods, learning resources, and patterns of educator-student relationships to create innovative learning opportunities (Statti & Torres, 2020). This transformational change is also in accordance with adaptation to conditions during the pandemic, which requires all institutions or educational institutions to implement distance learning (Mahlomaholo & Mahlomaholo, 2022; Omodan, 2022). Institutional education will be left behind if it does not quickly adapt to changes in digital-based education transformation during 4IR and the current pandemic (Sobri et al., 2020). In accordance with the new policy involving the government, it is recommended to stay and work at home during the pandemic. The educational paradigm has shifted from face-to-face learning to online learning. This is based on the Circular Letter of the Minister of Education and Culture Number 4 of 2020 concerning the Implementation of Education Policies in the Emergency Period for the Spread of COVID-19, which contains six important things related to changes in the implementation of education in Indonesia, one of which is the process of learning from home through online learning.

Online learning is considered the most appropriate solution for learning during the current pandemic (Wijaya et al., 2020) conveying the idea that the use of online learning has increased during the COVID-19 pandemic. This is based on the Circular Letter of the Minister of Education and Culture Number 4 of 2020 concerning the Implementation of Education Policies in the Emergency Period for the Spread of COVID-19, which contains six important things related to changes in the implementation of education in Indonesia, one of which is the process of learning from home through online learning.

Online learning during a pandemic can be carried out with the support of advanced technology and various platforms such as applications, websites, social networks, and learning management

systems (Dube et al., 2022; Gqokonqana et al., 2022; Latip, 2020; Mpu et al., 2022). Online learning uses the Internet, and it can be done either synchronously or asynchronously. The emergence of online learning as part of digital literacy can be used as an alternative to using technology in learning and to improve the quality of learning (Isidro & Teichert, 2021; Shatunova et al., 2021; Solikhah, et. al., 2022). Cultivating Self-Regulated Learning (SRL) is necessary to face learning difficulties during the COVID-19 pandemic. SRL is an active and constructive process for students to determine their learning goals, then monitor, regulate, and control their cognition, motivation, and behavior based on their learning goals and environment (Pintrich, 2000). SRL is one of the basic characteristics of the learning process, and this is in accordance with the Presidential Regulation of the Republic of Indonesia Number 87 of 2017. It was reported that students do not yet have self-regulated learning, which has become a habit (suaramerdeka.com, June 22, 2020). This has become one of the complex problems that emerged as a challenge for the world of education during the pandemic.

Acehtrend.com reported that low self-regulation while studying was characterized by low self-discipline and motivation. Bernasnews.com mentioned the lack of self-regulated learning because most still feel dependent on face-to-face learning/traditional methods. Badjeber (2020) claimed more than 60% of the students relatively lack the awareness to design, implement, monitor, and supervise their own learning needs, including utilizing various resources, and determining and practicing learning strategies during the pandemic. Sulisworo et al. (2020) showed that students in Indonesia need to improve SRL during the pandemic to remain responsible for the learning process and be successful in implementing online learning. The achievement of each student's SRL indicator in Padang City is still lower than 60%, which is relatively low. Yasdar & Mulyadi (2018) reported that 75% of students' SRL in South Sulawesi is low.

Rohaeti & Suwardi (2013) concluded that about 50% of SRL students in Yogyakarta are included in the low category because they rarely set and evaluate learning strategies, lack discipline in learning which causes irregular study schedules, and rarely use spare time to study material. This shows that the students' SRL is relatively low. Self-regulated learning has various benefits for students because SRL is a supporter of success in everyday life, including in learning, such as improving academic achievement, the key to discipline behavior, improving multitasking abilities, increasing rationality in decision making, and increasing efficiency in learning new knowledge. If

students do not have self-regulated learning, students will find it challenging to plan learning activities.

Internal and external factors can influence the development of SRL levels in students. Internal factors consist of epistemological beliefs, beliefs about learning, emotions, personal agency beliefs, and age and personality factors, while external factors that affect the development of SRL, such as family factors including parenting and parental involvement, school factors, including teacher-student relationships, support for teacher autonomy, the teaching model provided by the teacher and peer factors. SRL is also caused by personal, behavioral, and environmental factors. Personal factors consist of knowledge, thoughts, beliefs or self-efficacy, and goals. Behavioral factors consist of acts of observation, judgment, and self-reaction, while environmental factors are physical and social environments while studying (Schunk & Zimmerman, 1998). Another factor that affects self-regulated learning is digital literacy.

Digital literacy is a competency that individuals must have in using digital technology effectively to support academic needs, such as when accessing information digitally through the Internet. Digital technology is also similar to distraction which causes users to be unable to concentrate on completing their tasks and obligations so that digital devices that can increase productivity turn into performance barriers. Digital content and information widely distributed on the Internet can facilitate SRL. Current learning resources can be obtained via the Internet (Rohmah, 2019). It is undeniable that students need literature when doing assignments.

Every individual needs to have digital literacy to limit things that can distract students' activities when accessing the Internet so that students' opportunities to achieve learning goals are greater. Digital competence can also be called digital literacy. According to Risdianto (2019), digital literacy aims to improve the ability to read, analyze, and use information digitally. In other words, digital literacy encourages the use of digital technology devices to be more effective and healthier because today's digital natives, including students, feel less wise in using the Internet to find information. What is done is not based on particular interests and is not appropriate for age, as well as excessive use of social media. The 2015 World Economic Forum agreement requires all components of society, including students, to master six very important literacy basics, one of which is digital literacy. Digital literacy needs to be embedded in the education system because it positively affects student skills that are important for successful learning (Techataweewan & Prasertsin, 2018).

Mastering digital literacy in learning can facilitate and strengthen the learning process and educational outcomes, including student SRL achievements, because students can obtain information in a broader and deeper context, thereby increasing student insight and helping students complete their assignments (Elpira, 2018). Students are also able to survive various obstacles in learning and can solve problems that are being faced if they have digital literacy (Eshet, 2004).

According to the proposed framework by Beetham et al. (2009), digitally literate students can better organize their learning activities through technology than their less digitally literate counterparts. The literacy skills students have when accessing information from various digital sources are one of the important markers for self-regulated learning. The rapid progress of science and technology can contribute to the growth of independent learning, as evidenced by the research results (Subedi & Subedi, 2020; Yot-Domínguez & Marcelo, 2017), which show that everyday interactions with technology positively impact students' self-regulated learning.

Several relevant previous studies, such as Yang & Kim (2014), showed a positive and significant correlation between digital literacy and self-regulated learning in university e-learning environments. Research by Muthupoltotage & Gardner (2018) also found a positive relationship between digital literacy and self-regulated learning in the context of technology-based learning. Likewise, research results from Previously, et al. (2016) showed that digital literacy can have a much deeper relationship with self-regulated learning. In line with the connectivism learning theory, the explains the role of Internet network technology in creating opportunities for individuals to learn and share information and skills learned.

Research Methods

The study adopted a quantitative method and aimed to examine the relationship between digital literacy and self-regulated learning during the COVID-19 pandemic. The study has the following two variables: the independent variable (X) is digital literacy, while the dependent variable (Y) is self-regulated learning. The population is all research subjects with certain characteristics to study and draw general conclusions (Kurniawan, 2012). The study population consists of 233 Hindu Indonesia University Denpasar students from the 2017–2019 class. Seventy-nine students were in 2017, 74 students in 2018, and 80 students in 2019.

Respondents in this study were selected using a probability sampling technique with a proportional stratified random sampling method. The probability sampling technique treats all members of the population who are the research sample with a chance. A questionnaire was used to collect the study data. The questionnaire has a Likert scale close ended questions with items about digital literacy and self-regulated learning variables. The questionnaire is structured as a checklist and uses four alternatives: answers because it eliminates the neutral answer with the assumption that it is a little "ambiguous" (Sarjono & Julianita, 2011).

The validity test was conducted using the correlation coefficient technique through the Product Moment formula by employing the SPSS 23. Sarjono & Julianita (2011) state an instrument is called reliable if a person's answer to the statement tends to be stable or consistent from time to time. The instrument was tested with Alpha Cronbach through the help of the SPSS version 23 program, and the significance level was 5%. A questionnaire can be reliable if the results show a critical value of Cronbach's Alpha > 0.70 . The criterion test is if the ri value > 0.70 means the questionnaire is reliable, and vice versa. The validity test in this study uses the correlation coefficient technique using the Product Moment formula through the help of SPSS version 23 program. An instrument is called reliable if a person's answer to the statement tends to be stable or consistent from time to time. The instrument was tested through a Cronbach alpha by utilizing the SPSS 23. The significance level was found to be 5%.

The first data analysis technique, with descriptive statistics, is useful for describing data samples through data categorization without determining conclusions for the population (Sugiyono, 2010). In the prerequisite test analysis, two analytical prerequisite tests were conducted in several stages, namely 1) employing a normality test, conducted using the Kolmogorov-Smirnov technique. The criteria for the fulfillment of the normality test are seen from the significance value > 0.05 , while the significance value < 0.05 means the data is not normally distributed. 2) The linearity test aims to see whether the two variables studied (independent and dependent variables) are linearly related. The linearity criteria can be seen through the deviation from the linearity value, which must be greater than 0.05 (Prayitno, 2016).

The linearity of the study data was tested at a significance level of 0.05 using SPSS 23. 3) The heteroscedasticity test is used to identify the occurrence of inequality variance from one observation residual to another observation in the regression model (Ghozali, 2016).

By looking at the pattern of the scatterplot image, it can be seen that the fulfillment of the heteroscedasticity test criteria, namely if the data points are spread either above, below, or around the number 0, the spread of the points is not patterned, then it would be safe to say that there is no heteroscedasticity. Two stages are needed in testing the hypothesis: using a correlation test and simple regression analysis. Correlation test correlation coefficient test is used to determine the strength of the relationship between the two variables.

The purpose of correlation test is to measure the degree of relationship between the two variables, namely between the X variable (digital literacy) and the Y variable (self-regulated learning) (Sunarto, 2007). In this study, we learned to use the Pearson product moment technique; therefore, the data were collected in the form of interval data with a Likert scale. Simple regression is useful for detecting the direction of the positive or negative relationship between the independent variable and the dependent variable, as well as predicting how much change occurs in the value of the dependent variable if the independent variable changes either up or down.

Results

Data Description

The study data were obtained through Google Form questionnaires containing expression items representing each indicator both independently of the variable, namely digital literacy, and the dependent variable, namely self-regulated learning. The data obtained from the research subjects of 148 students at the Hindu Indonesia University Denpasar were analyzed using the SPSS 23. Table 1 shows the descriptive analysis results of the study data.

Table 1

Descriptive Analysis Results

	N	Range	Min	Max	Sum	mean	Std. Dev	Variance
Digital literacy	148	29	58	87	11068	74.78	5,949	35,395
Self-regulated learning	148	26	41	67	8025	54.22	5,290	27,984
Valid N	148							

(Source: Processed primary data, 2021)

Digital Literacy Variable (X)

Data on digital literacy variables were obtained from distributing questionnaires with as many as 23 statement items using a four-point Likert scale. The highest total score for the sample of 148

respondents was 13,616. The results of descriptive statistical processing with the help of the SPSS 23 are presented in Table 1. As it is shown by the table, the digital literacy variable collects a total score of 11,068 from the summation value. The maximum value that students get from this variable is 92. It is known that the maximum score for the digital literacy variable is 87, meaning that most students score three or four in each indicator. The minimum score is 58, meaning that most students score two or three on each available indicator. The standard deviation value explains the heterogeneity of a group to the average, which can be said to be good if the data is heterogeneous and the value is far from 0. The standard deviation value is 5.949, which is considered heterogeneous. The average score of 74.78 indicates that the average student scores three in each indicator.

The distribution of digital literacy data with the highest frequency ranges between 70–73 and 74–77 interval classes, with as many as 35 students. The tendency of students can be classified into high, medium, and low. The results of the category of digital literacy are central tendencies. The digital literacy of the Hindu University Siswa Indonesia Denpasar is at a moderate level, equivalent to 66.22%. The percentage of digital literacy achievement for students at Hindu Indonesia University Denpasar is 81.28% obtained by dividing the total score collected by the highest total score. Digital literacy is measured through three indicators as seen in table 2.

Table 2

Digital Literacy Indicator Achievement

No	Indicators	Achievements indicator
1	Technical literacy	86.49%
2	Cognitive literacy	80%
3	Socio-emotional literacy	81.44%

(Source: Processed primary data, 2021)

Table 2 shows that the role of each indicator has different magnitudes of influence. The most dominant indicator in achieving student digital literacy lies in the technical literacy indicator, with an indicator achievement of 86.49%. This technical literacy indicator contains basic operational mastery of digital technology, showing that most students have mastered the basic skills to use digital tools.

Independent Learning Variables

Data on the self-regulated learning was obtained from the distribution of a questionnaire with 18 items using a four-point Likert scale. The highest total score for a sample of 148 respondents was 10,656. The results of processing descriptive statistics with the help of the SPSS 23 are presented

in Table 1. The findings revealed that self-regulated learning variable collects a total score of 8025 from that total score. The maximum score of this variable is 72. It is known that the maximum value for the self-regulated learning variable is 67, meaning most students give a score of three or four on each indicator. The minimum score is 41. This means that most students score two or three on each available indicator. The standard deviation value explains the heterogeneity of a group concerning the mean. This value is considered good if the data are heterogeneous and the value is far from 0 the deviation value is 5.290. Thus, it can be said to be heterogeneous. The average score of 54.22 indicates that the average student scores three on each indicator. See table 3.

Table 3

Self-Regulated Learning Indicator Achievement

No	Indicators	Achievement indicator
1	Memory strategy	70.44%
2	Goal setting	71.79%
3	Self evaluation	74.66%
4	Seeking help	81.93%
5	Environmental arrangements	78.04%
6	Learning responsibilities	72.41%
7	Planning and organizing	77.42%

(Source: Processed primary data, 2021)

Table 3 shows that the role of each indicator has different magnitudes of influence. The most dominant indicator of the achievement of students' self-regulated learning lies in the indicator of seeking assistance, with an indicator achievement of 81.93%. This indicator of seeking help contains various efforts that students can make to seek help when they do not understand the material or assignments given by the lecturer, either through the social environment, namely all people involved in the learning process, including lecturers and friends, as well as non-social environments including learning facilities, and facilities.

Hypothesis Testing

Table 4

Simple Correlation Test Results

	Correlations	Self-regulated learning (Y)
Digital literacy Pearson (X)	Correlation	,478
	Sig. (2-tailed)	,000
	N	148

(Source: Processed primary data, 2021)

Based on Table 4 shows that the correlation coefficient (r-count) between digital literacy and learning independence is $0.478 > r\text{-table} (0.1603)$. To see the level of relationship between the two variables, the correlation coefficient interval should be checked. A value of 0.478 is included in the moderate relationship level. The correlation coefficient value shows a positive relationship. The significance value is $0.000 < 0.05$, which means the relationship is significant. Based on these results, it can be concluded that H_0 is rejected, and H_1 is accepted. Thus, it would be safe to say that the digital literacy variable has a positive and significant relationship with self-regulated learning during the COVID-19 pandemic for the Denpasar University of Hindu Indonesia students.

Table 5*Simple Regression Test Results*

Unstandardized coefficients		Standardized coefficients		<i>t</i>	Sig.
<i>B</i>	<i>Std. Error</i>	<i>Beta</i>			
(Constant)	22.414	4,848		4,623	,000
Digital literacy	,425	,065	,478	6.582	,000

Dependent Variable: Self-Regulated Learning (Source: Processed primary data, 2021)

Based on Table 5, the following regression model equation is developed:

$$Y = 22.414 + 0.425X$$

This equation can be interpreted as a constant of 22,414 which means that if digital literacy (X) is 0, then the amount of self-regulated learning (Y) is 22.414. The digital literacy regression coefficient (X) of 0.425 means that for every 1% addition of digital literacy value, the self-study (Y) value also increases by 0.425. The regression coefficient is positive, so it can be said that the direction of the influence of the digital literacy variable (X) on the self-regulated learning variable (Y) is positive. Table 4.9 shows that the significance value is $0.000 < 0.05$ and it means that the digital literacy variable (X) affects the self-regulated learning variable (Y). The t-count value is $6.582 > t\text{-table} 1.976$, so it can be concluded that the digital literacy variable (X) affects the self-regulated learning variable (Y).

Discussion and Conclusion

The results of hypothesis testing show a positive and significant relationship between digital literacy and independent learning during the COVID-19 pandemic for students at the Hindu Indonesia University Denpasar. This is in accordance with the value indicated by the correlation coefficient (r-count) of 0.478 and a mean value of 0.000. The correlation coefficient value is 0.478.

When consulted with the correlation coefficient interval table, it is included in the moderate level of relationship. It can be seen that the r-count is positive, which means that when students' digital literacy increases, their independent learning will also increase. This is also in accordance with the results shown in the simple regression analysis results, namely the regression value of digital literacy coefficient (X) of 0.425.

The hypothesis testing results align with the findings of Yang & Kim (2014) reporting a positive and significant correlation between digital literacy and self-regulated learning in the university's e-learning environment. Some studies such as Atkins et al. (2013), Greene et al. (2014), Muthupoltotage & Gardner (2018) and Steiner et al. (2013) support these findings. They reported a positive and significant relationship between digital literacy and independent learning. Independent learning is one of the important characteristics that students must have when carrying out the learning process. This is in accordance with Presidential Regulation of the Republic of Indonesia No. 87 of 2017 concerning strengthening character development. Students are said to have self-regulated learning if they can complete various tasks given by the lecturer based on their efforts and abilities. The current pandemic condition shows the real urgency of SRL, one of the important markers that students must have to achieve self-regulated learning is digital literacy skills. Digital literacy is a form of business manifested in the ability to access, browse, analyze, and use information digitally. The habit of reading learning resources both offline and online from the Internet in the form of digital books, articles, and national and international journals that affect knowledge, increase understanding, open insight, and further develop mindset skills, thus forming and facilitating the achievement of SRL so that the decisions taken are right on target, to solve problems being faced and to meet their learning needs. Students have a lot of information that can be managed in such a way as to support success both in academics and in everyday life. In other words, digital literacy is a way or form of self-ability in finding information to achieve self-regulation while learning.

Students have a lot of information that can be managed to support success in both academic and daily life. In other words, digital literacy is a way or form of self-ability to find information to achieve self-regulation while learning.

Digital literacy also helps students to know the limits of Internet use according to their needs and interests, for example, preventing excessive use of social media. Literacy is the primary basis for increasing knowledge. Digital literacy is one of the efforts that can foster self-regulated learning.

The agreement by the 2015 World Economic Forum also obliges everyone, including students, to master six basic literacy skills that are very important in life, one of which is digital literacy (Techataweewan & Prasertsin, 2018).

Digital literacy positively affects skills that are important to support successful student learning (Techataweewan & Prasertsin, 2018). Students with self-regulated learning can manage their learning patterns optimally, supported by their ability to use digital technology to find learning resources and literature digitally supplement the material needed for certain courses due to pandemic conditions requiring online learning. It is possible for students to re-read the material obtained so that there are no misconceptions, reconfirm for the lecturer or his friends by discussing to reach an understanding, and be able to support the work given by the lecturer.

The level of digital literacy and self-regulated learning at Hindu Indonesia University Denpasar students are in the medium category. That means students can quite regulate the learning process relevant to the current development of science and technology. There are seven indicators to measure self-regulated learning. Of the seven indicators, seeking assistance indicator has the highest achievement with a rate of 81.93%. The indicator of seeking help relates to the various efforts that students make to seek help when they feel they do not understand the material or assignments given by the lecturer, both through the social environment, namely all people involved in the learning process, including lecturers and friends, and non-social environments including facility or learning tool.

The lowest achievement indicator is the memory strategy indicator of 70.44%. The indicator of memory strategy is related to the memory ability shown by students toward the lecture material. With low achievement on the memory strategy indicator, among other indicators, reflecting that students have not been able to get used to reading back notes or lecture material before starting class, students sometimes feel lazy to summarize themselves and tend to rely on their friends' notes,

The level of self-regulated learning is also caused by each student's digital literacy level. Digital literacy measurement uses three indicators. Of the three indicators, the highest achievement indicator is the technical literacy indicator with a rate of 86.49%. Technical literacy indicators are related to basic operational mastery of digital technology. This is also associated with the high level of seeking help in self-regulated learning indicators. If students can demonstrate their basic skills when using digital tools, this can make it easier when seeking help to find suitable

alternatives for satisfaction with their learning achievements, for example, through the use of laptops, gadgets, the Internet, browsers, and others.

Then, the digital literacy indicator with the lowest achievement is cognitive literacy at a level of 80%. This is related to the low memory strategy because cognitive literacy is related to students' ability to find and process information. Weak memory can be caused because students lack the initiative to seek information first. Usually, students tend to like instant things. One of the behaviors that reflect a lack of memory is that students are not accustomed to rereading notes or lecture material, even though students should be able to analyze in depth first any information obtained so that it is embedded in long-term memory.

Students need to enrich their digital literacy to enhance their independent learning. The results of this study have supported the theory of connectivism, which explains the role of Internet network technology in creating opportunities for individuals to learn and share information and learning skills. According to Sekarini (2019), digital literacy is included in environmental factors that can increase self-regulated learning. According to Beetham et al. (2009), digitally literate students are better at managing their learning activities through technology. Digital literacy is an important provision to achieve student SRL because it is facilitated by the availability of technology (Latifah, 2020). Digital literacy positively affects learner skills that are essential for successful learning (Techataweewan & Prasertsin, 2018). Utilization of technology can develop SRL. Daily interactions with technology have a positive impact on SRL. This shows the positive contribution made by the development of science and technology to the improvement of SRL (Yot-Dominguez & Marcelo, 2017).

This study implies that digital literature serves independent learning for students especially when a face-to-face teaching is not possible to conduct. Additionally, when Covid-19 pandemic is over, digital literature is considered crucial for general learning courses and improvement of learning model.

To conclude, this study has proved that digital literature significantly relates to independent learning in the teaching learning process during pandemic-19. Digital literature provides ease for students to find learning sources that are available online, chief or almost free of cost, and easy to find. The way students browse the teaching materials are dependent on students' experience. However, as the way to obtain the materials are on the students' own wish, the students are equipped with independent learning.

This study has limitation in that the research procedures conducted during Covid-19 pandemic is not perfect. Some restrictions because of pandemic protocols make the research process is not freely conducted. Future research is suggested to replicate the research in the post-pandemic when protocols are not set. Additionally, specific research design such as an experimental study is recommended to observe small number of students to see the effect of the digital literature to independent learning more effective.

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