

The Effectiveness of Digital Literacy Indicators in Improving Students' Reading Interest

Idam Ragil Widiyanto Atmojo¹, Roy Ardiansyah², Ainun Nafisah³, Matsuri⁴, Dwi Yuniasih Saputri⁵, Chumdari⁶

¹ Universitas Sebelas Maret, Indonesia; idamragil@fkip.uns.ac.id

² Universitas Sebelas Maret, Indonesia; royardiansyah@staff.uns.ac.id

³ Universitas Sebelas Maret, Indonesia; ainunnafisah814@student.uns.ac.id

⁴ Universitas Sebelas Maret, Indonesia; matsuri@staff.uns.ac.id

⁵ Universitas Sebelas Maret, Indonesia; dwiyuniasihsaputri@staff.uns.ac.id

⁶ Universitas Sebelas Maret, Indonesia; chumdari@staff.uns.ac.id

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ABSTRACT

This study aimed to determine the effectiveness of digital literacy indicators in improving students' reading interests. This research used a quantitative method. The samples in this study were the fifth-grade students at SDN Pajang IV, SDN Tegalrejo, SDN 1 Jajar, and SDN Setono, totaling 86 respondents. The data collection technique employed was a questionnaire. The data analysis utilized was SEM (Structural Equation Model) analysis with SmartPLS and SPSS programs. This research was conducted by testing the instrument outside the sample but in one regional population. After that, the instrument was distributed to the research samples. The study results revealed that the effectiveness of digital literacy in improving reading interest was 29%. Further research on improving elementary school students' digital literacy and reading interest can be done on other factors, such as family roles, age, reading intensity, or academic grades.

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Corresponding Author:

Idam Ragil Widiyanto Atmojo

Universitas Sebelas Maret, Surakarta, Indonesia

Email: idadamragil@fkip.uns.ac.id

1. INTRODUCTION

Indonesia is a country whose literacy skills still need improvement (Amalia, 2021). Based on data from the Central Statistics Agency, the average percentage of students in urban areas in Indonesia aged 5-24 years at the elementary level who accessed mobile phones was 90.94%, who accessed computers was 23.52%, and those who accessed the internet was 85.13%. Meanwhile, in rural areas, access to mobile phones was 81.20%, computer access was 8.77%, and the internet was 66.87%. It displays the gaps in

access to information and communication technology between cities and villages (Putri & Permata, 2020). In fact, accessing information and communication technology is one indicator of digital literacy skills. Furthermore, another digital literacy problem is indicated by the abuse of internet access to view pornographic and violent content (Adhastian & Muhlisin, 2021; Nawangsari, 2019). As a result, cyberbullying, cybercrime, and sexual violence will emerge among students (A'yuni, 2015). Kominfo's (2020) data on Indonesian digital literacy showed that the digital literacy index had not yet reached 4.00 (good) but only above 3.00 (medium). These problems can be avoided by building critical-thinking skills in the utilization of digital technology (Handayani, 2020; Muliawanti & Kusuma, 2019). Critical thinking skills are also needed in analyzing information in the form of reading so that it can affect interest in reading.

In this case, students will have critical thinking if they read books more often (Kurniawan, 2018). Reading interest should be developed and accustomed to every human being from an early age, either by themselves or by others, to increase their achievements in the future (Muslimin, 2018). Reading interest is a deep tendency of one's soul, followed by feelings of pleasure and a strong desire to read without coercion (Anjani et al., 2019). However, based on Kemendikbud's (2019) data, the national reading literacy activity index was in the low category at 37.32 of the total maximum value of 100. In addition, based on the 2018 PISA results, the Indonesian reading category ranked 74 (six from the bottom) with an average score of 371 (Tohir, 2019). These data relate to the low interest in reading in Indonesia.

On the other hand, information can be obtained from various media in the digital era. The information presented combines visual text and verbal text. Ideally, with a variety of media, it gives interest to information. Pitoyo (2020) suggested that reading interest is influenced by literacy activities, technology, and library facilities. Everyone needs to be interested in reading because the success, progress of the nation, and the quality of human resources can be improved through reading (Yukaristia, 2019). In addition, in education, literacy can shape students' critical thinking skills (Mardiyah, 2018). Therefore, critical thinking and reading interest are interrelated and necessary.

In the preliminary study, based on the results of interviews with several fifth-grade elementary school teachers in Laweyan District, namely Athikah Rahmi Hidayati S. Pd., Gia Anggin Sambarani S. Pd., Sri Widiyatmini S. Pd., and Dyah Febriana K., S. Pd. on October 11, 2021, the reading interest of fifth graders was still low. Students would read when assigned by the teacher. Students' environment also did not support reading books due to inadequate reading facilities, such as books and smartphones. It caused students have not been able to understand and evaluate information and content in digital media, such as hoaxes, cyberbullying, and others. Based on the explanation above, the fifth-grade students in Laweyan District have not been able to optimize digital literacy skills and did not have a high reading interest.

Several research results have also encouraged carrying out this research. The results showed that digital literacy, parental mediation, and student self-control affected the impact/risk of online learning (Purnama et al., 2021). In addition, the use of mobile learning in the context of elementary schools can be effective and have a positive effect on the development of students' thinking skills, provided that they are properly organized and use collaborative learning and motivate students (Cai, 2021). Further, the growth of reading interest can be done in three stages: the habituation stage, development stage, and learning stage (Imanugroho & Ganggi, 2018).

In this study, the selection of fifth-grade students as research subjects was due to Piaget's cognitive theory, suggesting that based on the cognitive development of students aged 7 to 11 years, they could use their minds to think logically, rationally, and objectively on an empirical and abstract object (Bujuri, 2018). Socio-emotionally, fifth graders can interact with their friends, understand, and cultivate their abilities (Kharisma et al., 2020). In terms of language development, they can understand the good and bad words, use words, and manage sentences (Dewi et al., 2020; Julrissani, 2020). It was the reason behind selecting the fifth-grade students as research subjects.

Previous research on associated topics includes research on digital literacy competencies for teachers and students. A study revealed the importance of digital literacy competency learning programs among teachers and students, which positively impacted understanding and skills in using digital media, especially educational media (Asari et al., 2019). The second research is about increasing digital literacy

skills for fourth and fifth graders (Aziz et al., 2020). It was found that the students understood the insights about the healthy and safe use of information and communication technology and the internet. The third is the research on the effectiveness of digital literacy services in increasing students' reading interest during the COVID-19 pandemic. The results showed that digital literacy services quite effectively increased students' reading interest during the pandemic (Wulandari & Sholeh, 2021). It can be seen in most students who prefer to read through digital literacy services since much information can be accessed easily.

Digital literacy services contain more information and are easy to access (Restianty, 2018). It is in line with the research conducted by Fauziyah & Kurniawan (2020). Digital literacy also provides a direct reading experience because technology allows students to read information, books, news, or other texts. Therefore, it can be concluded that digital literacy is related to reading interest.

However, this research conducted is different from previous research. This research discussed skills in the 21st century. The topic was chosen because it is relevant to the current situation in the 21st century, namely digital literacy skills. Here, students need reading interest and digital literacy skills to understand the information in digital media and avoid hoaxes and others. Moreover, learning interest was chosen as variable X because it aligns with the national literacy movement mandated by the Ministry of Education and Culture in 2016 following Permendikbud No. 23 of 2015. Research carried out previously has mostly measured students' digital literacy skills and the influence of literacy in learning and focused on supporting aspects to improve students' digital literacy skills. However, there was no influence of digital literacy on students' reading interests, especially in the subject of elementary school students.

For this reason, this research is vital to improving students' reading interest through digital literacy. It is because, in the digital era, information needs to be processed by reading and thinking critically so that students can ward off hoaxes and cybercrime and know the positive and negative impacts that may occur due to the use of technology (Ariyana et al., 2018). Furthermore, digital literacy helps students obtain wider and deeper information so that their knowledge and ability to find information from digital media are increased (Wulandari & Sholeh, 2021).

Based on the background, it is necessary to conduct a study entitled *"The Effectiveness of Digital Literacy Indicators in Improving Students' Reading Interest."*

2. METHOD

This study used the quantitative research method. This research was conducted for seven months, from September 2021 to March 2022. The population was the fifth-grade elementary school students in Laweyan District, Surakarta City. The samples were taken from four schools: SDN Pajang IV, SDN Tegalrejo, SDN 1 Jajar, and SDN Setono. The sampling technique employed was the probability sampling technique with cluster-random sampling. The number of samples in this study was 86 students. The data on digital literacy and reading interest were collected using a questionnaire. The digital literacy instrument was adapted from the previous research (Asari et al., 2019; Febliza & Oktariani, 2020). The digital literacy indicators included technology use (TU), information management (IM), social networking (SN), online safety (OS), and the positive impact of technology (PIT). Furthermore, the reading interest instrument was also adapted from the previous research (Anjani et al., 2019; Miftachurrochmah & Haq, 2020). The reading interest instrument consisted of reading interest, concentration, use of free time, motivation to read, emotion in reading, and effort to read. Then, the digital literacy and reading interest questionnaire used a Likert scale with choices of never (1), rarely (2), sometimes (3), often (4), and always (5). The data were analyzed using SEM (Structural Equation Modeling) analysis with SmartPLS and SPSS applications. The following is the figure of the SEM model. SEM is a multivariate statistical technique, which combines factor analysis and regression analysis (correlation); it aims to examine the relationships between variables in a model, both between indicators and their constructs or relationships between constructs (Santoso, 2007). The data analysis technique using Structural Equation Modeling (SEM) was carried out to explain the relationship between the variables in the study thoroughly. In this case, SEM was used not to design a theory but rather to

examine and justify a model. Therefore, the main requirement for using SEM is to build a hypothetical model consisting of a structural model and a measurement model in the form of a path diagram based on theoretical justification.

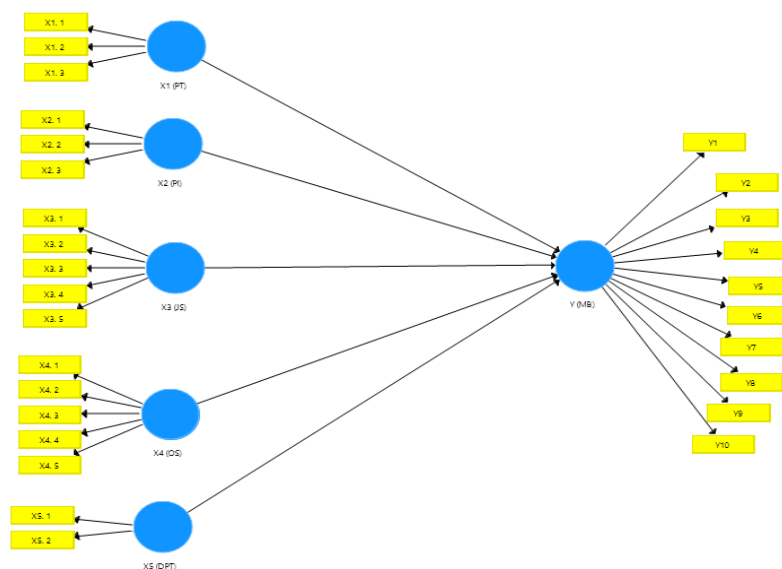


Figure 1. SEM Analysis Model

3. FINDINGS AND DISCUSSION

Based on the research, the results obtained are as follows.

Description of Descriptive Statistical Data

Table 1. Statistical Data for Indicator X and Variable Y

Variable	N	Minimum	Maximum	Mean	Std. Deviation
TU (X1)	86	3	15	9.19	2.835
IM (X2)	86	3	15	7.62	2.923
SN (X3)	86	5	25	15.33	5.234
OS (X4)	86	5	24	12.29	5.543
PIT (X5)	86	2	10	5.56	2.015
RI (Y)	86	15	47	31.01	8.133

Validity and Reliability Tests

After calculating descriptive statistics, validity and reliability tests were performed before hypothesis testing. A valid instrument means that it can be used to measure what should be measured on the variables studied (Sugiyono, 2017). Validity tests in this study covered convergent validity (loading factor and AVE value) and discriminant validity (Fornell-Lacker criterion and cross-loading). The explanation is as follows.

*Convergent validity**Loading factor or outer loading*

Hermawan & Hasibuan (2017) asserted that the loading factor or outer loading value should be > 0.70 with the construct to be measured. However, a loading value of 0.50 to 0.60 is considered sufficient for preliminary research. The following are the outer loading value.

Table 2. Loading Factor Values

	X1 (TU)	X2 (IM)	X3 (SN)	X4 (OS)	X5 (PIT)	Y (RI)
X1.	0.768					
X1.	0.834					
X1.	0.688					
X2.		0.629				
X2.		0.825				
X2.		0.793				
X3.1			0.848			
X3.2			0.837			
X3.3			0,839			
X3.4			0.726			
X3.5			0.747			
X4.1				0.671		
X4.2				0.624		
X4.3				0,800		
X4.4				0.853		
X4.5				0.771		
X5.					0.871	
X5.					0.696	
Y1						0.631
Y2						0.676
Y3						0.656
Y4						0.659
Y5						0.779
Y6						0.673
Y7						0.688

Y8	0.648
Y9	0.701
Y10	0.693

Based on the data above, the outer loading value of each indicator was greater than 0.6, so each indicator was valid.

AVE (Average Variance Extracted)

AVE is the variable value that must be greater than 0.5 (Budhiasa, 2016).

Table 3. AVE Values

	AVE
X1 (TU)	0.586
X2 (IM)	0.568
X3 (SN)	0.641
X4 (OS)	0.560
X5 (PIT)	0.621
Y (RI)	0.464

Discriminant validity

Fornell-Lacker criterion

The Fornell-Lacker criterion is the correlation of a variable with the variable itself and other variables. The value is valid if the correlation value of the variable with its variable is greater than the correlation value with other variables.

Table 4. Fornell-Lacker Criterion Value

	X1 (TU)	X2 (IM)	X3 (SN)	X4 (OS)	X5 (PIT)	Y (RI)
X1 (TU)	0.766					
X2 (IM)	0.457	0.754				
X3 (SN)	0.569	0.493	0.801			
X4 (OS)	0.463	0.540	0.490	0.749		
X5 (PIT)	0.590	0.517	0.671	0.463	0.788	
Y (RI)	0.469	0.255	0.358	0.348	0.473	0.681

Based on Table 4 above, the value of the relationship between variables and the variables themselves was greater than the relationship between variables so that the variable could be said to be valid.

Cross loading

Cross loading is the correlation of indicators with variables. The cross-loading value is valid if the indicator value is greater than the indicator value of a variable with other variables.

Table 5. Cross Loading Values

	X1 (TU)	X2 (IM)	X3 (SN)	X4 (OS)	X5 (PIT)	Y (RI)
X1. 1	0.768	0.245	0.535	0.315	0.512	0.386
X1. 2	0.834	0.416	0.315	0.406	0.410	0.420
X1. 3	0.688	0.429	0.453	0.352	0.457	0.225
X2. 1	0.273	0.629	0.340	0.379	0.387	0.182
X2. 2	0.312	0.825	0.371	0.352	0.365	0.212
X2. 3	0.453	0.793	0.403	0.499	0.442	0.177
X3.1	0.533	0.451	0.848	0.376	0.636	0.396
X3.2	0.436	0.321	0.837	0.292	0.516	0.271
X3.3	0.429	0.411	0,839	0.395	0.548	0.258
X3.4	0.486	0.491	0.726	0.545	0.553	0.209
X3.5	0.374	0.301	0.747	0.416	0.397	0.236
X4.1	0.287	0.417	0.304	0.671	0.228	0.190
X4.2	0.376	0.478	0.507	0.624	0.409	0.168
X4.3	0.417	0.454	0.466	0.800	0.430	0.279
X4.4	0.339	0.356	0.287	0.853	0.332	0.315
X4.5	0.339	0.391	0.349	0.771	0.353	0.303
X5. 1	0.601	0.504	0.604	0.339	0.871	0.434
X5. 2	0.282	0.282	0.437	0.414	0.696	0.297
Y1	0.342	0.165	0.299	0.288	0.301	0.631
Y2	0.348	0.154	0.171	0.277	0.357	0.676
Y3	0.361	0.204	0.237	0.168	0.234	0.656
Y4	0.237	0.071	0.209	0.145	0.251	0.659
Y5	0.298	0.080	0.204	0.131	0.348	0.779
Y6	0.236	0.188	0.266	0.231	0.248	0.673
Y7	0.234	0.192	0.281	0.187	0.326	0.688
Y8	0.271	0.131	0.219	0.149	0.175	0.648

Y9	0.205	0.120	0.177	0.109	0.325	0.701
Y10	0.483	0.316	0.324	0.460	0.478	0.693

After the validity test, the reliability test was performed using Cronbach's Alpha and Composite Reliability values. The reliability test using Cronbach's Alpha requires that a construct is reliable if its value is above 0.60 and composite reliability is greater than 0.6 (Budhiasa, 2016). The reliability test values are presented in the table below.

Table 6. Cronbach's Alpha and Composite Reliability Values

	Cronbach's Alpha	Composite Reliability
X1 (TU)	0.658	0.809
X2 (IM)	0.610	0.796
X3 (SN)	0.862	0.899
X4 (OS)	0.804	0.863
X5 (PIT)	0.603	0.764
Y (RI)	0.874	0.896

Hypothesis Testing

After the validity and reliability tests, the next step was to test the hypothesis to determine the effectiveness or influence of digital literacy indicators on students' reading interests.

R-square value

R-square is the value of the endogenous variable (Y) that affects the X variable. The results of this study revealed that the R-square was 0.293, so the X variable (digital literacy indicator) affected the Y variable (reading interest) by $0.293 \times 100\% = 29\%$.

Path Coefficients

Path coefficients are the direction of the positive/negative variable relationship. Based on the test results, the following path coefficients were obtained:

Table 7 Path Coefficients Values

	X1 (TU)	X2 (IM)	X3 (SN)	X4 (OS)	X5 (PIT)	Y (RI)
X1						0.282
X2						- 0.096
X3						- 0.036

X4	0.141
X5	0.316
Y	

Based on the table above, the variables with a positive relationship direction are

X1 with Y

X4 with Y

X5 with Y

and the variables with a negative relationship direction are

X2 with Y

X3 with Y.

The relationship between digital literacy indicators and reading interest is presented in Figure 2 below.

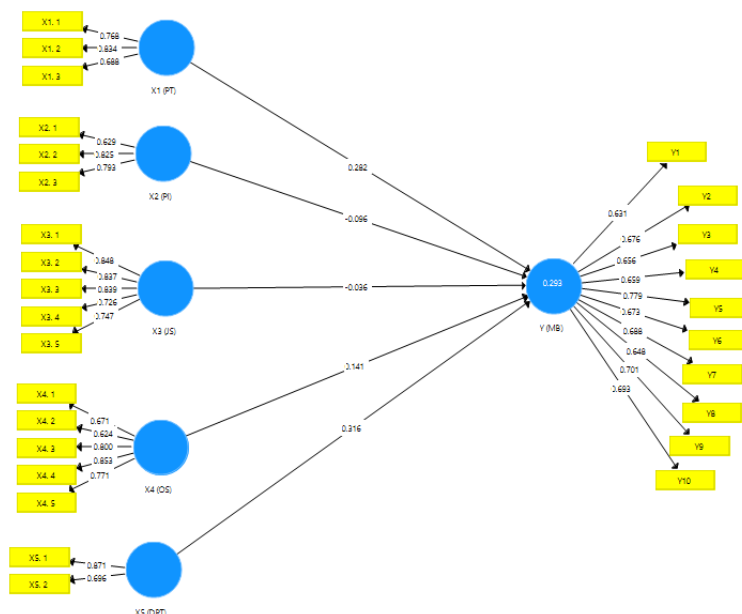


Figure 2. Path Coefficients between Digital Literacy Indicators and Reading Interest

Then, T-statistic (bootstrapping) is the value to determine the significance of the relationship between variables X and Y. If T statistic <1.97, it is not significant, but if T statistic >1.97, it means significant. The calculation results of the T statistic can be seen in the following table.

Table 8. T Statistics Values

	T Statistics
X1 (TU) -> Y (RI)	2.159
X2 (RI) -> Y (RI)	0.731
X3 (SN) -> Y (RI)	0.246
X4 (OS) -> Y (RI)	1.003
X5 (PIT) -> Y (RI)	2.092

Based on Table 7, the significant relationships between the X and Y variables were X1 (Technology Use) with Y (Reading Interest) and X5 (Positive Impact of Technology) with Y (Reading Interest), whereas the insignificant relationships were X2 (Information Management) with Y (Reading Interest), X3 (Social Networking) with Y (Reading Interest), and X4 (Online Safety) with Y (Reading Interest).

Moreover, predictive relevance is a value that shows how well the observations are made. If the value is above 0, the observations made are good. This study showed the results of predictive relevance of $0.103 > 0$, so the observations in this SEM analysis were good.

Then, model fit (NFI) refers to how the model made in the SEM analysis is fit. The study resulted in an NFI of 0.531, so the SEM analysis model in this study was 53% fit.

Based on the hypothesis testing results, digital literacy indicators affected reading interest by 29%. It means that the effectiveness of digital literacy in increasing reading interest was 29%. The results of this research align with the research conducted by Fariña et al. (2015). This study also showed that reading activities in a digital environment could influence reading performance since students sought information and read, did assignments, and communicated through internet access and technological devices such as computers. In addition, according to Wulandari & Sholeh (2021), digital literacy is quite effective in improving students' reading interests. It can be seen that students were more interested in reading references through digital platforms than books, and most of them preferred to read digital literacy services because much information can be accessed easily. It is supported by the findings, which revealed that the indicator of technology use on reading interest had a positive and significant relationship with the T statistic of 2.159. In other words, if students' use of digital technology increased, their reading interest also increased.

Further, this research can be useful in improving students' reading interest through reading via digital media. In this case, students often use digital media access due to facilities, economic status, and the role of parents in supporting students in accessing technology. It is under the opinion (Syah et al., 2019). In addition, the pandemic has caused the intensity of access to technology to increase (Gusty et al., 2020). All learning is conducted online through digital devices so that students read the material and work on questions through internet access. It causes a relationship between reading interest and digital literacy.

4. CONCLUSION

Based on the results and discussion above, it can be concluded that the digital literacy indicators effectively improved students' reading interest by 29%. For further research, studies on improving

students' digital literacy skills and reading interest can be done on other factors, such as family roles, age, reading intensity, or academic grades.

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