

## Contribution of Digital Literacy to Students' Science Learning Outcomes in Online Learning

Yundri Akhyar<sup>1\*</sup>, Muhammad Ilham Syarif<sup>2</sup>, Zalisman<sup>3</sup>, Anggi Fitri<sup>4</sup>, Niswah<sup>5</sup>, Parlindungan Simbolon<sup>6</sup>, Ayu Purnamasari<sup>7</sup>, Nofita Tryana<sup>8</sup>, Zaitun Abidin<sup>9</sup>

<sup>1,2</sup> Fakultas Tarbiyah dan Keguruan, UIN Sultan Syarif Kasim Riau, Indonesia

<sup>3,4,5,6,7,8,9</sup> Prodi Pendidikan Guru Madrasah Ibtidaiyah, Sekolah Tinggi Ilmu Tarbiyah Al-Kifayah Riau, Indonesia

### ARTICLE INFO

#### Article history:

Received March 07, 2021

Revised March 10, 2021

Accepted May 11, 2021

Available online May 25, 2021

#### Kata Kunci:

Literasi digital, Hasil Belajar, IPA

#### Keywords:

Digital Literacy, Learning Outcomes, Science



This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.

Copyright © 2021 by Author. Published by Universitas Pendidikan Ganesha.

### ABSTRAK

Pembelajaran dalam jaringan (daring) memberikan dampak negatif bagi siswa, khususnya siswa yang tidak bisa menggunakan fasilitas pendukung pembelajaran daring. Hal ini berdampak pada penurunan kualitas hasil belajar siswa. Penelitian ini bertujuan untuk menganalisis pengaruh pelaksanaan literasi digital terhadap hasil belajar IPA siswa pada pembelajaran daring dimasa pandemi Covid-19. Penelitian ini merupakan penelitian di bidang pendidikan dengan menggunakan pendekatan kuantitatif dan metode korelasi. Populasi dalam penelitian ini berjumlah 348 orang. Penentuan sampel dalam penelitian ini menggunakan teknik random sampling. Metode pengumpulan data yang digunakan adalah angker dan tes hasil belajar IPA. Instrumen yang digunakan telah melalui tahap pengujian validitas dan reliabilitas instrumen. Analisis data yang digunakan dalam penelitian ini adalah analisis regresi linier sederhana, yang sebelumnya dilakukan beberapa uji prasyarat analisis berupa uji normalitas dan homogenitas. Hasil penelitian menunjukkan perhitungan koefisien korelasi sebesar 4,412 lebih besar dari 2,034 dengan nilai signifikansi 0,000 lebih kecil dari nilai alfa 0,05, koefisiens determinasi sebesar  $0,371 \times 100\%$  sebesar 37,1%. Berdasarkan hasil tersebut, dapat disimpulkan bahwa terdapat pengaruh positif dan signifikan penerapan literasi digital terhadap hasil belajar IPA siswa.

### ABSTRACT

Online learning has a negative impact on students, especially students who cannot use online learning support facilities. This has an impact on the decline in the quality of student learning outcomes. This study aims to analyze the effect of implementing digital literacy on students' science learning outcomes in online learning during the Covid-19 pandemic. This research is research in the field of education using a quantitative approach and correlation method. The population in this study amounted to 348 people. Determination of the sample in this study using the random sampling technique. The data collection methods used are questionnaires and science learning outcomes tests. The instrument used has gone through the stages of testing the validity and reliability of the instrument. The data analysis used in this research is simple linear regression analysis, which previously carried out several analysis prerequisite tests in the form of normality and homogeneity tests. The results showed that the calculation of the correlation coefficient of 4.412 is greater than 2.034 with a significance value of 0.000 less than an alpha value of 0.05, a coefficient of determination of  $0.371 \times 100\%$  of 37.1%. Based on these results, it can be concluded that there is a positive and significant effect on the application of digital literacy on students' science learning outcomes.

## 1. INTRODUCTION

The Covid-19 pandemic has become a major threat to all countries in the world. Including Indonesia, approximately 1 year 2 months the Covid-19 pandemic hit. The Covid-19 infection causes mild, moderate, or severe symptoms, clinical symptoms that appear are fevered above  $38^{\circ}\text{C}$ , cough, and shortness of breath (Dobrea et al., 2021; Yuliana, 2020). To break the chain of the spread of the Covid-19 virus, the government issued policies and regulations limiting distance and human movement. This problem has an impact on the implementation of the education process in Indonesia. The Government directly issued a circular from the Minister of Education and Culture of the Republic of Indonesia Number 3 of 2020 concerning the prevention of the spread of the Covid-19 virus in education units. Based on this circular, all elements of education carry out online learning (Iswatiningsih et al., 2020; Tembang & Purwanty, 2020). Online learning is often referred to as online learning (in the network). Online learning is a learning system that is not done face-to-face but uses a platform that can help the teaching and

\*Corresponding author.

E-mail addresses: [akyaryundy879@gmail.com](mailto:akyaryundy879@gmail.com) (Yundri Akhyar)

learning process that is carried out even though it is far away (Handarini & Wulandari, 2020; Pratiwi, 2020; Roni Hamdani & Priatna, 2020).

Three semesters of online learning are carried out, using technology, especially the internet. Online learning is carried out using a distance learning system, where Learning and Teaching Activities (KBM) are not carried out face-to-face. The online learning process during the pandemic can access mobile devices such as smartphones or android phones, laptops, computers, tablets, and iPhones that can be used to access information anytime and anywhere (Pribowo, 2020; Samsinar, 2020). Learning from home activities implemented by the community causes students and teachers to lose the opportunity to interact with each other in social relationships, foster an attitude of solidarity between fellow humans, lose a sense of caring and empathy. By implementing online learning, students become less active in conveying their aspirations and thoughts, so that it can result in boring learning (Arizona et al., 2020; Handayani et al., 2020; Kristina et al., 2020). Therefore, motivation is needed to move students so that they are enthusiastic about learning so that they can have learning achievements (Yazid & Ernawati, 2020).

Motivation to increase learning enthusiasm and learning outcomes need to be considered, especially in science learning. Because science learning is often considered a difficult, complicated, and less interesting subject (Suwarno, 2017; Trisdiono & Zuwanti, 2017). For most students, science is considered an abstract and scary subject. Learning science is not abstract and scary learning. Science learning is what we do every day. Science is learning that is closely related to everyday life (Apriliyani et al., 2018; Juhji, 2016). Science learning essentially emphasizes providing direct experience to develop competencies so that students can explore and understand the natural surroundings scientifically (Utami et al., 2019). Science is directed to find out and act so that it can help students to gain a deeper understanding of the natural surroundings (F. E. Wulandari, 2016). Developing knowledge and understanding science concepts and their relation to everyday life is the main goal of science learning (Rostikawati & Permanasari, 2016; Senisum, 2014).

Based on the observations that the author made at SD Negeri 61 Pekanbaru during the implementation of online learning or distance learning, the results of science learning in class V decreased, this can be seen from the results of the midterms 1 and 2 of the 2019/2020 school year. According to the fifth-grade teacher, the learning process has been carried out according to the provisions, using various applications such as WhatsApp group, google meet, zoom cloud meeting, and others. However, only WhatsApp can be used as a means of giving assignments and learning videos to students. When virtual learning is carried out, many students are not present, this is because not all students have learning devices such as computers and androids. Most students study at night when their parents are at home. The current situation is a challenge for the world of education, changing management is very much needed to keep up with the very fast changes. Manual and conventional learning methods are currently being replaced with online digital systems that are not limited by space and time, we can take advantage of developments in technology and information to find information on learning materials with the help of the internet. Currently, digital literacy has become a familiar thing, both in the academic and non-academic fields. One alternative that appears related to digital literacy is the shift of physical reading materials to digital. Digital literacy makes it easier for readers to access information whenever and wherever needed using devices connected to the internet network.

Digital literacy is the ability that a person has in utilizing information and communication technology to find, evaluate, create and communicate information that requires cognitive skills (A'yun, 2021; Silvana & Cecep, 2018). his digital literacy also requires functional skills so that they can find and select relevant information, evaluate critically, be creative, collaborate with others, communicate effectively and still pay attention to aspects of electronic security and the socio-cultural context that is growing in society. Currently, schools are required to instill the use of ICT in all areas of learning. Digital literacy is a life skill that does not only involve the ability to use ICT tools, but also social skills, abilities as human learners, as well as having attitudes, critical thinking, creativity, and inspiration as competencies in digital literacy. The concept of digital literacy is not only about the ability to read, but also reading with meaning and understanding. Digital literacy is also related to the ability to understand information, evaluate and integrate information in various formats presented by computers. Digital literacy implemented in schools helps students to discover new things in learning, students who are accustomed to implementing literacy activities will improve their reading, interpreting, and producing texts that are valuable in learning (Kaeophanuek et al., 2019).

It is hoped that the implementation of digital literacy can maintain the quality of education. As research shows that digital literacy services are considered effective enough to increase students' reading interest during the Covid-19 pandemic (D. R. Wulandari et al., 2021). This research is reinforced by research that shows the results, digital literacy skills and collaboration skills of students are included in the high and good category in the learning process (A'yun, 2021). Based on the problems, expert opinions

and previous research, a study was conducted that aims to determine the effect of implementing digital literacy on student science learning outcomes during the Covid-19 Pandemic.

## 2. METHOD

The type of research used in this study is a quantitative approach with a descriptive correlational research design. Descriptive method provides a description or description of data seen from the average value (mean), standard deviation, variance, maximum value, minimum value, sum, range, kurtosis, and skewness (Ghozali, 2018). The correlational method is a research that involves collecting data to determine the existence of a relationship and the level of the relationship between two or more variables (Wibawa, 2014). This research was conducted at SD Negeri 61 Pekanbaru with a population of 348 students in grades I to VI and the sample of the study was class V as many as 35 people. Data collection techniques using questionnaires and tests. A questionnaire is a method of collecting data by giving a set of written statements or questions to respondents to respond according to user requests (Astuti et al., 2020). The questionnaire in this study was used to determine the feasibility of applying digital literacy to student learning outcomes. A test is a series of questions or exercises and other tools used to measure skills, intelligence knowledge, abilities or talents possessed by individuals or groups (Juniarta & Winarno, 2016). In this study, the test was used as a measuring tool for students' science learning outcomes with the application of digital literacy. The purpose of correlational research is to analyze the extent to which variations of a variable are related to variations of one or more other variables based on the correlation coefficient (Kusuma & Kristiyanto, 2016). In this research, the analytical method used is regression. Regression analysis is applied to research to examine the consequences and magnitude of the effects of one or more independent variables on one dependent variable (Paramitha et al., 2016). A good regression model must meet the requirements of classical assumptions. The classical assumptions made in fulfilling the regression requirements include normality tests and homogeneity tests.

## 3. RESULT AND DISCUSSION

### Result

This section discusses the exposure of the results of the calculation of the influence of digital literacy variables on student learning outcomes. Data analysis used simple regression with normality test results as shown in Table 1.

**Table 1.** Data Normality Test Results

		Unstandardized Residual
N		35
Normal Parameters <sup>a, b</sup>	Mean	.0000000
	Std. Deviation	5.28116925
Most Extreme Differences	Absolute	0.103
	Positive	0.103
	Negative	-0.095
Test Statistic		0.103
Asymp. Sig. (2-tailed)		0.200 <sup>c, d</sup>

Table 1 is the output of the normality test of the data. The basis for decision making in the normality test is, if the significance value (p) on the Kolmogorov-Smirnov test results exceeds = 0.05 then the data is normally distributed (Oktaviani & Notobroto, 2014). Based on this explanation, it can be concluded that the significance value (2-Tailed) in table 1 is 0.200 > 0.05, so the data is normally distributed. Furthermore, one of the important assumptions of the linear regression model is the error variance on each value of the independent variable is the same (constant), this assumption is also known as the assumption of homoscedasticity or homogeneity of variance. The test decisions and conclusions were taken at a significance level of 0.05. If the probability value is greater than 0.05, then H<sub>0</sub> is accepted, so that the data comes from a homogeneous variant. If the probability value is less than 0.05, then H<sub>a</sub> is accepted, so that the data comes from unequal variance (heterogeneous). Based on the data analysis, information was obtained that the homogeneity test results resulted in a significance value of 0.290 greater than 0.05. Thus, it can be concluded that the data obtained by the Implementation of Digital Literacy and Student Learning Outcomes are the same (homogeneous).

Based on the calculation of the correlation coefficient, it can be seen that the constant value for the variable for implementing digital literacy is 25.435, while the result of the coefficient value for

implementing digital literacy is 0.200. Thus, a linear regression equation can be made with reference to the formula  $Y = a + b_1.X_1$ , as follows:  $Y = 25.435 + 0.667.X_1$  The meaning of the linear regression equation is: (a) the constant value of 25.435 states that if the value of  $X_1 = 0$  or the variable for implementing digital literacy does not exist, then the value of the science learning outcomes variable is 25,435; (b) The regression coefficient of the digital literacy implementation variable is 0.667, meaning that for every addition of 1 (one) point of the digital literacy implementation variable, it will increase students' social studies learning outcomes by 0.667 times. The regression coefficient of the digital literacy implementation variable has a positive sign (0.667), which implies that the implementation of digital literacy is in line with students' science learning outcomes, in other words, that the digital literacy implementation variable has a positive influence on students' science learning outcomes. Hypothesis testing is done by t-test and f-test whose purpose is to find out whether the hypothesis is accepted or rejected, with the provisions as described previously.

The t-test was conducted to determine whether the independent variable (implementation of digital literacy) on the dependent variable (students' science learning outcomes) had a significant effect or not. Based on data analysis, obtained t-count of 4.412 at the sig level of 0.000. This means that the tcount value is 4.412 at the level of probability (belief) 0.05 (95%) and the t-table is 2.034. The criteria for accepting the hypothesis are If t-count > t-table and sig < 0.05, then  $H_0$  is rejected and  $H_a$  is accepted and if t-count < t-table, and sig > 0.05 then  $H_0$  is accepted and  $H_a$  is rejected. Real level = 5%, degrees of freedom (df) =  $n-2 = 35-2 = 33$ . From the above calculation results, it is known that the t-count value is > t-table (4.412 > 2.034) and sig < 0.05 (0.000 < 0.05) this means that  $H_0$  is rejected and  $H_a$  is accepted. This significance implies that the implementation of digital literacy has a significant effect on the science learning outcomes of students at SD Negeri 61 Pekanbaru.

The results of data processing to determine the results of the F test. The criteria for testing the value of  $F_{count}$  against  $F_{table}$  are, if the value of  $F_{count} < F_{table}$  then  $H_0$  is accepted and  $H_a$  is rejected and if the value of  $F_{count} > F_{table}$  then  $H_0$  is rejected and  $H_0$  is accepted. Based on the analysis, the  $F_{count}$  is 19.464 and sig 0.000.  $F_{table}$  at level = 0.05, df 1 = (number of independent variables = 2) and df2 ( $n - k - 1 = 35 - 2 - 1 = 32$ ), then the value of  $F_{Table} = 3.29$ . This means that  $F_{count} > F_{table}$  (19.464 > 3.29) and sig < 0.05 (0.00 < 0.05), then the hypothesis can be accepted. In this case, it can be said that the variable of applying digital literacy has a significant effect on students' science learning outcomes, so that the independent variables can be used to estimate or predict students' science learning outcomes. The value of the coefficient of determination is a tool to measure the contribution of the independent variables studied to the variation of the dependent variable. The results of the coefficient of determination of each variable. Based on the calculations that have been done, it can be seen that the R value is 0.609. This value indicates that the relationship between digital literacy variables and students' science learning outcomes is close or strong, which is 60.9%. While the value of  $R^2$  is 0.371. Because the coefficient of determination test is obtained from linear regression calculations, the coefficient of determination is 0.371 or  $R^2 \times 100\%$  is 37.1%. The significance of this value has the implication that the digital literacy variable affects the science learning outcomes of the students of SD Negeri 61 Pekanbaru by 37.1%, and the remaining 62.9% is influenced by other variables outside the model included in this study.

## Discussion

Respondents' perceptions about the implementation of digital literacy were obtained through questionnaires, and students' science learning outcomes were taken through tests. Then the data was tested using regression analysis, from the formulation of the problem whether there was an effect of implementing digital literacy on the science learning outcomes of the students of SD Negeri 61 Pekanbaru. To test the hypothesis that has been determined by conducting the t-test and f-test, it was found that there is a positive and significant influence between the variables of implementing digital literacy on students' science learning outcomes. This can be seen in the t-test results obtained t-count value of > t-table (4,412 > 2.034) and sig < 0.05 (0.000 < 0.05) this means that  $H_0$  is rejected and  $H_a$  is accepted. And in the f test,  $F_{count}$  is 19.464 and sig 0.000.  $F_{table}$  at level = 0.05, df 1 = (number of independent variables = 2) and df2 ( $n - k - 1 = 35 - 2 - 1 = 32$ ), then the value of  $F_{table} = 3.29$ . This means that  $F_{count} > F_{table}$  (19.464 > 3.29) and sig < 0.05 (0.00 < 0.05), then the hypothesis can be accepted and the coefficient of determination is 0.371 or  $R^2 \times 100\%$  is 37.1%. The significance of this value has the implication that the digital literacy variable affects the science learning outcomes of students at SD Negeri 61 Pekanbaru by 37.1%, and the remaining 62.9% is influenced by other variables.

The results of this study indicate that the application of digital literacy during the Covid-19 pandemic has a positive influence on students' science learning outcomes. This regression coefficient indicates that the higher the application of digital literacy, the higher the science learning outcomes will be. Vice versa, when the application of digital literacy is getting lower, it will be followed by a decrease in

science learning outcomes. Literacy mastery is an important indicator to improve the achievements of the younger generation in achieving success (Irianto & Febrianti, 2017; Silvana & Cecep, 2018). Various forms of learning that can be done by students in implementing digital literacy such as reading and sending emails, accessing learning management systems, reading e-journals or ebooks, conducting online quizzes, participating in discussion forums, and so on (Tang & Chaw, 2016; Tetep & Suparman, 2019).

Instilling literacy as early as possible must be realized because it is the main capital in realizing an intelligent and cultured nation. Schools as learning centers are the best means to raise awareness, build critical thinking and resilience, and to influence the mediation of family support technology through digital literacy activities (Mudasih et al., 2020; Nascimbeni & Vosloo, 2019). Likewise, this digital literacy program aims to provide knowledge, understanding and skills among young people in accessing information presented by digital media (Silvana & Cecep, 2018). The factor that causes the application of digital literacy to affect science learning achievement is due to digital literacy training for students during the Covid-19 pandemic which later developed and was used as a learning medium in online classes and from the student's family environment that provided facilities that could be used to support students do digital literacy. This is in accordance with research which suggests that digital literacy learning outcomes have a positive effect on motivation, student learning outcomes (Lin et al., 2017). Likewise, other studies reveal that students who own a computer and use it as a medium for learning have a positive effect on student graduation outcomes (Fairlie et al., 2010).

#### 4. CONCLUSION

Learning by applying digital literacy during the COVID-19 pandemic has a positive and significant impact on students' science learning outcomes. This study provides suggestions for all parties with an interest in this research, namely elementary school teachers can apply digital literacy in learning during the COVID-19 pandemic. For further researchers, it is recommended to develop this research, not only on student learning outcomes, but can be seen from the aspects of interest, student learning motivation, parental participation and also supporting and inhibiting factors.

#### 5. REFERENCES

- A'yun, Q. (2021). Analisis Tingkat Literasi Digital dan Keterampilan Kolaborasi Siswa dalam Pembelajaran IPA Kelas VII Secara Daring. *Jurnal Didaktika Pendidikan Dasar*, 5(1), 271–290. <https://doi.org/10.26811/didaktika.v5i1.286>.
- Apriliyani, N. K. A., Dantes, N., & Pudjawan, K. (2018). Pengaruh Model Pembelajaran Think Talk Write (TTW) Terhadap Sikap Ilmiah Dan Hasil Belajar IPA. *International Journal of Elementary Education*, 2(3), 164. <https://doi.org/10.23887/ijee.v2i3.15967>.
- Arizona, K., Abidin, Z., & Rumansyah, R. (2020). Pembelajaran Online Berbasis Proyek Salah Satu Solusi Kegiatan Belajar Mengajar Di Tengah Pandemi Covid-19. *Jurnal Ilmiah Profesi Pendidikan*, 5(1), 64–70. <https://doi.org/10.29303/jipp.v5i1.111>.
- Astuti, A. A. I. Y., Wibawa, I. M. C., & Suarjana, I. M. (2020). The Effectiveness of Problem Based Learning Toward Students ' Science Learning Outcomes. *Jurnal Ilmiah Sekolah Dasar*, 4(4), 573–580. <http://dx.doi.org/10.23887/jisd.v4i4.25667>.
- Dobrea, R. C., Gole, I., & Rotaru, C. (2021). Globalization – a Cause or a Solution for Corona Economic Crisis. *SHS Web of Conferences*, 92, 01008. <https://doi.org/10.1051/shsconf/20219201008>.
- Fairlie, R. W., Beltran, D. O., & Das, K. K. (2010). Home Computers and Educational Outcomes: Evidence from the NLSY97 and CPS. *Economic Inquiry*, 48(3). <https://doi.org/10.1111/j.14657295.2009.00218.x>.
- Ghozali, I. (2018). *Aplikasi Analisis Multivariat Dengan Program IBM SPSS 25*. Badan Penerbit Universitas Diponegoro.
- Handarini, O. I., & Wulandari, S. S. (2020). Pembelajaran Daring Sebagai Upaya Study From Home (SFH) Selama Pandemi Covid 19. *Jurnal Pendidikan Administrasi Perkantoran (JPAP)*, 8(3), 465–503. <https://journal.unesa.ac.id/index.php/jpap/article/view/8503>.
- Handayani, T., Khasanah, H. N., & Yoshinta, R. (2020). Pendampingan Belajar Di Rumah Bagi Siswa Sekolah Dasar Terdampak Covid-19. *ABDIPRAJA (Jurnal Pengabdian Kepada Masyarakat)*, 1(1), 107. <https://doi.org/10.31002/abdipraja.v1i1.3209>.
- Irianto, P. O., & Febrianti, L. Y. (2017, June). Pentingnya penguasaan literasi bagi generasi muda dalam menghadapi MEA. In *Proceedings Education and Language International Conference* (Vol. 1, No. 1). <http://jurnal.unissula.ac.id/index.php/ELIC/article/view/1282>.
- Iswatiningsih, D., Fauzan, Dluhayati, & Lestari, Y. K. (2020). Efektivitas Pembelajaran Bahasa Indonesia

- Daring di Masa Pandemi COVID-19 Dalam Meningkatkan Kemampuan Berbahasa Siswa SMP. *Jurnal Pendidikan, Kebahasaan Dan Kesustraan Indonesia*, 5(1), 141–156.
- Juhji, J. (2017). Model Pembelajaran Sains Teknologi Masyarakat dalam Pembelajaran IPA. *Primary: Jurnal Keilmuan dan Kependidikan Dasar*, 8(1), 25-34. <http://103.20.188.221/index.php/primary/article/view/144>.
- Aji, B. S., & Winarno, M. E. (2016). Pengembangan instrumen penilaian pengetahuan mata pelajaran pendidikan jasmani olahraga dan kesehatan (PJOK) Kelas VIII semester gasal. *Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan*, 1(7), 1449-1463. <http://dx.doi.org/10.17977/jp.v1i7.6594>.
- Kaeophanuek, S., Na-Songkhla, J., & Nilsook, P. (2019). A learning process model to enhance digital literacy using critical inquiry through digital storytelling (CIDST). *International Journal of Emerging Technologies in Learning*, 14(3), 22–37. <https://doi.org/10.3991/ijet.v14i03.8326>.
- Kristina, M., Sari, R. N., & Nagara, E. S. (2020). Model Pelaksanaan Pembelajaran Daring Pada Masa Pandemi Covid 19 Di Provinsi Lampung. *Idaarah: Jurnal Manajemen Pendidikan*, 4(2), 200. <https://doi.org/10.24252/idaarah.v4i2.16945>.
- Kusuma, H., & Kristiyanto, A. (2016). Hubungan Motivasi, Tinggi Badan dan Power Otot Tungkai terhadap Keterampilan Bolabasket. *Jurnal Media Ilmu Keolahragaan Indonesia*, 6(2), 47–53. <https://doi.org/10.15294/miki.v6i2.8744>.
- Lin, M. H., Chen, H. C., & Liu, K. S. (2017). A study of the effects of digital learning on learning motivation and learning outcome. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(7), 3553–3564. <https://doi.org/10.12973/eurasia.2017.00744a>.
- Mudasih, I., Tjipto, S. W., & Susanti. (2020). The effect of financial literacy, digital literacy, and entrepreneurial learning outcome on entrepreneur behavior of students at SMK Negeri 1 Surabaya. *Technium Social Sciences Journal*, 6.
- Nascimbeni, F., & Vosloo, S. (2019). *Digital Literacy for Children: Exploring Definitions and Frameworks* (Issue 01). United Nations Children’s Fund (UNICEF).
- Oktaviani, M. A., & Notobroto, H. basuki. (2014). Perbandingan Tingkat Konsistensi Normalitas Distribusi Metode Kolomogorov-Smirnov, Lilliefors, Shapiro-Wilk, dan Skewness-Kurtosis. *Jurnal Biometrika Dan Kependudukan*, 3(2), 127–135. <http://www.journal.unair.ac.id/download-fullpapers-biometrikd8bc041810full.pdf>.
- Paramitha, A. D., Suparti, S., & Wuryandari, T. (2016). Pemodelan Regresi 3-level Dengan Metode Iterative Generalized Least Square (IglS)(Studi Kasus: Lamanya Pendidikan Anak Di Kabupaten Semarang). *Jurnal Gaussian*, 5(1), 21-30.
- Pratiwi, E. W. (2020). Dampak Covid-19 Terhadap Kegiatan Pembelajaran Online Di Perguruan Tinggi Kristen Di Indonesia. *Perspektif Ilmu Pendidikan*, 34(1), 1–8. <https://doi.org/10.21009/pip.341.1>.
- Pribowo, F. S. P. (2020). Persepsi Guru SD Muhammadiyah Terhadap Penggunaan Gawai Dalam Pembelajaran Di Kelas. *Literasi Dalam Pendidikan Di Era Digital Untuk Generasi Milenial*, 209–219. <http://journal.um-surabaya.ac.id/index.php/Pro/article/view/4885>.
- Roni Hamdani, A., & Priatna, A. (2020). Efektifitas Implementasi Pembelajaran Daring (Full Online) Dimasa Pandemi Covid- 19 Pada Jenjang Sekolah Dasar Di Kabupaten Subang. *Didaktik : Jurnal Ilmiah PGSD STKIP Subang*, 6(1), 1–9. <https://doi.org/10.36989/didaktik.v6i1.120>.
- Rostikawati, D. A., & Permanasari, A. (2016). Rekonstruksi Bahan Ajar Dengan Konteks Socio-Scientific Issues Pada Materi Zat Aditif Makanan Untuk Meningkatkan Literasi Sains Siswa. *Jurnal Inovasi Pendidikan IPA*, 2(2), 156–164. <https://doi.org/10.21831/jipi.v2i2.8814>.
- Samsinar. (2020). Mobile Learning : Inovasi Pembelajaran Di Masa Pandemi Covid-19. *Al-Gurfah> Journal Of Primary Education*, 1(1), 41–57. <https://mail.jurnal.iain-bone.ac.id/index.php/algurfah/article/view/372>.
- Senisum, M. (2014). Implementasi pendekatan sains teknologi dan masyarakat dalam pembelajaran IPA sd. *Jurnal Pendidikan Dan Kebudayaan Miso*, 7(1), 114–124.
- Silvana, H., & Cecep. (2018). Pendidikan Literasi Digital Di Kalangan Usia Muda Di Kota Bandung. *Pedagogia*, 16(2), 146. <https://doi.org/10.17509/pgia.v16i2.11327>.
- Suwarno, L. (2017). Penerapan Model Pembelajaran Berpikir Melalui Pertanyaan (PBMP) Dengan Media Online Edmodo Dapat Meningkatkan Penguasaan Konsep Siswa Dalam Pelajaran IPA Pada Pokok Bahasan Sistem Tata Surya Pada Kelas VIII Di SMP Negeri 2 Mataram. *Jurnal Ilmiah MAndala Education*, 3(2), 145–163. <http://ejournal.mandalanursa.org/index.php/JIME/article/view/197>.
- Tang, C. M., & Chaw, L. Y. (2016). Digital literacy and effective learning in a blended learning environment. *The Electronic Journal Of Learning*, 14(1), 601–610. <https://researchonline.jcu.edu.au/40787/>.
- Tembang, Y., & Purwanty, R. (2020). Outdoor based ecosystem learning during the covid pandemic 19 Merauke elementary school students. *Jurnal Ilmiah Sekolah Dasar*, 4(4), 524–535. <https://doi.org/10.23887/jisd.v4i4.29141>.

- Tetep, & Suparman, A. (2019). Students' digital media literacy: Effects on social character. *International Journal of Recent Technology and Engineering*, 8(2 Special Issue 9), 394-399. <https://doi.org/10.35940/ijrte.B1091.0982S919>.
- Trisdiono, H., & Zuwanti, I. (2017). Strategi Implementasi Model Pembelajaran Kooperatif Tipe Jigsaw Di Kelas IV Sekolah Dasar. *Premiere Educandum : Jurnal Pendidikan Dasar Dan Pembelajaran*, 7(02), 95. <https://doi.org/10.25273/pe.v7i2.1468>.
- Utami, N. M. Y., Margunayasa, I. G., & Kusmaryatni, N. N. (2019). Pengaruh Model Pembelajaran Kolaboratif Berbantuan Peta Pikiran Terhadap Hasil Belajar Ipa Ditinjau Dari Motivasi Berprestasi. *Jurnal Ilmiah Pendidikan Profesi Guru*, 2(2), 246-254. <https://doi.org/10.23887/jippg.v2i2.19178>.
- Wibawa, B. (2014). *Metode Penelitian Pendidikan*. In: *Konsep Dasar Metode Penelitian Pendidikan*. Universitas Terbuka.
- Wulandari, D. R., Sholeh, M., Pendidikan, M., Pendidikan, F. I., & Surabaya, U. N. (2021). Efektivitas Layanan Literasi Digital Untuk Meningkatkan Minat Baca Siswa Di Masa Pandemi Covid-19. *Jurnal Inspirasi Manajemen Pendidikan*, 09(02). <https://ejournal.unesa.ac.id/index.php/inspirasi-manajemen-pendidikan/article/view/39155>.
- Wulandari, F. E. (2016). Pengaruh Model Pembelajaran Berbasis Proyek untuk Melatihkan Keterampilan Proses Mahasiswa. *PEDAGOGIA: Jurnal Pendidikan*, 5(2), 247-254. <https://doi.org/10.21070/pedagogia.v5i2.257>.
- Yazid, M., & Ernawati, A. (2020). Hasil Belajar Siswa Di Mi Nw Pancor Kopong Pada Masa Pandemi Covid-19. *Prima Magistra: Jurnal Ilmiah Kependidikan*, 1(2), 205-209. <https://doi.org/10.37478/jpm.v1i2.661>.