



## Online Learning Behavior During COVID-19 Pandemic toward Students' Digital Literacy Skills

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**Abstract:** COVID-19 pandemic changes the learning pattern is everywhere, including in Indonesia. This change raises problems in elementary school. This study analyzed online learning behavior in elementary school and the digital literacy skills of students during the Covid-19 pandemic in Indonesia. The descriptive qualitative research method with survey techniques toward 60 respondents was employed to investigate online learning behavior and digital literacy skills. The finding and data on digital literacy indicators show that the students have 8 elements of digital literacy, there are functional skills, creativity, critical thinking and evaluation, cultural and social understanding, collaboration, the ability to find and select information, effective communication, and e-safety. According to the data, the result shows that online learning behavior affects students' digital literacy skills

**Keywords:** COVID-19 Pandemic, Online Learning, Students' Digital Literacy.

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### INTRODUCTION

Since the outbreak of the COVID-19 pandemic in Wuhan, China in 2019, the entire life system in every country has changed. All of the countries were affected by the COVID-19 pandemic, one of them is Indonesia. Coronavirus disease-2019, also known as COVID-19 attacked Indonesia in mid-March 2020 (Dewi, 2020). Based on data published by the Task Force for Acceleration in Handling COVID-19, there are 40,400 confirmed cases of COVID-19 in Indonesia and 7.82 million cases worldwide as of today (2020). Seeing a large number of confirmed cases, changes in the patterns and order of life have occurred massively in various fields including learning patterns in the education sector. In Indonesia, to break the chain of the COVID-19 outbreak, the Minister of Education and Culture has issued circular number 4 of 2020 on Implementing of Education in the Emergency Coronavirus Disease (COVID-19) which states that the learning process during COVID-19 is carried out by students from home (distance learning) based in the network (online). The purpose of online learning is to fulfill the rights of students to get educational services even in the emergency period of the spread of COVID-19, to protect the education unit

residents from the effect of COVID-19, breaking the chain of COVID-19 spread and ensuring psychosocial support for the teachers, students, and parents (Ministry of Education and Culture, 2020). The existence of a new pattern that was decided by the Ministry of Education and Culture during the Covid-19 pandemic is a big challenge, not only for the teachers as facilitators of learning activities but also for the students and parents of students.

Online learning is a learning pattern that is carried out to reach massive and broad groups through the internet network (Yanti, Kuntarto, and Kurniawan, 2020), and as a learning activity that is carried out virtually through various applications that are available and accessible to the teachers, students, and also parents (Syarifudin, 2020). However, online learning is not just transferring learning in textbooks into virtual classrooms because the teachers must also pay attention to how strategies, methods, models, and approaches refer to constructivism theory that encourages the students to take an active role during online learning so that the learning experience of students can be more meaningful.



Not only providing meaningful learning experiences for students, but online learning patterns will also more or less lead students to use various digital media in joining learning activities made by the teachers. Digital media is such as mobile phones, laptops, and computers. Therefore, the ability of students to use and access learning activities using digital media is having an impact on the development of students' digital literacy skills. Digital literacy according to Gilster is the ability to understand and use information from various digital sources (in Atoy Jr, Renee O, Garcia, Cadungog, Cua, Mangunay, and Guzman, 2020). Digital literacy is needed by the students so that they can explore the digital world safely and confidently and can make the best use of information available in digital media (Aziz, et al. 2020). Several studies on literacy were carried out such as Nelson, et al (2020) which discussed new concepts so that digital literacy can be applied both online and offline to the students without ignoring critical things in the existing digital literacy concept. Furthermore, Kumpulainen, et al. (2020) discuss digital literacy in the socio-cultural aspects of students in their home environment, the importance of this digital literacy practice is built in the context of the home contextually and longitudinally to reveal children's cultural, critical, creative, and literacy values, without ignoring the background of the students. Therefore, there is a need for a local conceptualization of digital literacy in an increasingly globalized education system. That is why in one of the indicators of digital literacy there is the ability of students to find and choose the right information. Based on the previous study, it is necessary to conduct a study on the digital literacy of students, especially at the elementary school level, given the

importance of digital literacy skills being developed in the education sector. So, this study focuses on a descriptive analysis of digital learning behavior and digital literacy skills of elementary school students during the Covid-19 pandemic.

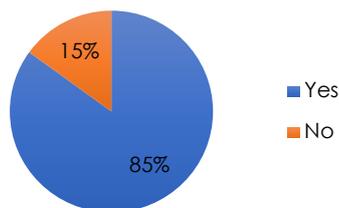
## **METHOD**

This study used a descriptive qualitative method with survey techniques. Through survey techniques, it is expected that it can collect information on students' digital literacy skills during the pandemic in Purwakarta, West Java, Indonesia. The digital literacy skills survey instrument was developed from indicators of Hague and Payton's research results (in Shively and Palilonis, 2018). These indicators are such as functional skills, creativity, critical thinking and evaluation, cultural and social understanding, collaboration, the ability to find and select information, effective communication, and e-safety. The 8 indicators were made into the questions relate to the Covid-19 pandemic, the readability analysis stage, and expert judgment. The respondents in this study were 60 elementary school students in grade V in Purwakarta, West Java, Indonesia. They were the respondents who gave the feedback on 25 questions given on google form. Furthermore, the data that has been collected was analyzed to describe the results obtained.

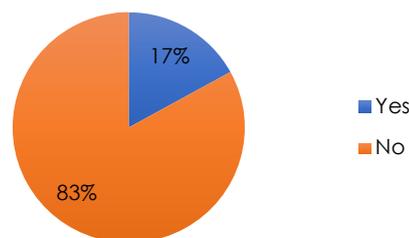
## **RESULT AND DISCUSSION**

### **Results of Functional Skills Indicator Survey**

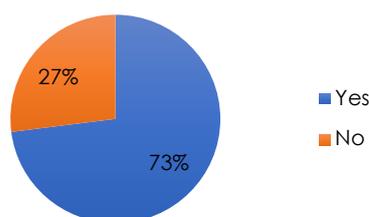
The first indicator that will be discussed is functional skills and is shown in the diagram below:



**Figure 1.** The ability to use a digital device.



**Figure 2.** The responses toward the learning problem through the application on the mobile phone.

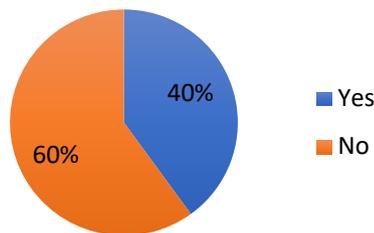


**Figure 3.** The responses toward learning problems through the application on the computer.

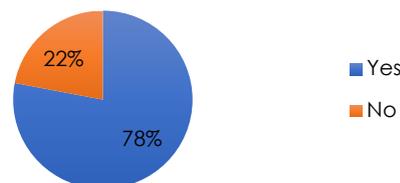
Based on the 3 figures, it can be concluded that the respondents answered 3 questions differently. The first picture explains that 85% of students can use digital devices, it can be mobile phones, computers, or laptops, this is in line with the second picture which shows that 83% of students did not face the problems when learning using applications on the mobile phone, meanwhile in figure 3, 73% of students faced the problems when learning using applications on computers. Therefore, the digital media that is often used by students is mobile phones, besides the ease of use, mobile phones are also currently one of the media that provides good fulfillment of information, entertainment, social networking, and other things. It is in line with what Setiawan (2017) explains that the development of mobile

phones is growing rapidly into social penetration which plays a big role in the digital revolution by providing entertainment, communication, and online connectivity. Then other things that influence the ability of students to use digital media is because the children (students) are involved in various digital practices at home, two of which are popularly used are mobile phones and computers so that the increased exposure to technology at home to students is very high (Carrington, et al 2011). Therefore, referring to various explanations and data contained in Figure 1-3, the functional skills indicator of students in using technology, information, and communication devices show that students fulfill one of the digital literacy skills indicators.

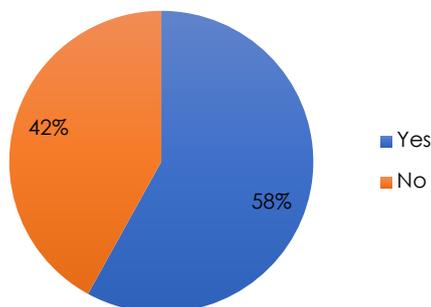
### Results of Creativity Indicator Survey



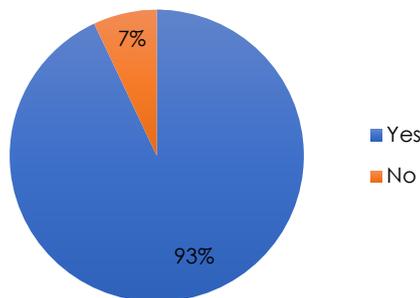
**Figure 4.** The ability to draw using digital media



**Figure 5.** the ability of photos or videos editing using digital media



**Figure 6.** Interesting in making dancing or singing videos using digital media

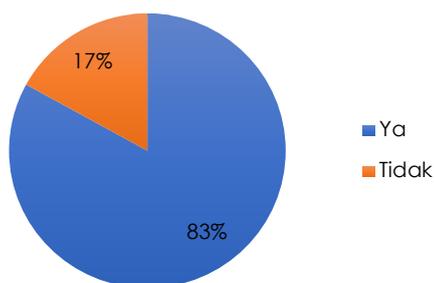


**Figure 7.** Interest in the drawing-on-drawing book or digital media

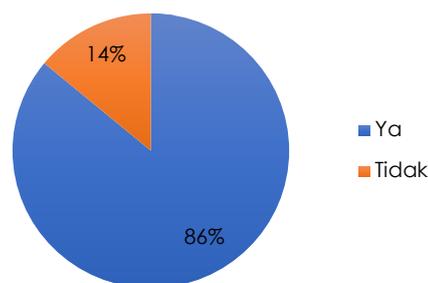
The creativity indicator in digital literacy shows that 60% of students cannot draw a picture using digital media, and it is strengthened by the survey results that 93% of students prefer to draw in drawing book than using digital media so this showed the alignment of the results survey obtained. Then in the ability of photos or video editing using digital media the percentage is 78%, which means that the students can edit photos or videos. Besides editing videos, the students can also make dancing or singing videos using digital media with a percentage of 58%. Referring to the results of the survey, it can be concluded that the ability of students to use digital media as a tool for making videos, editing videos, and editing

photos is included in activities to develop their creative attitudes. The ability of students to use digital media in training their creativity is in line with the study of Davidson (2011) that a student can reach the highest point of ability during various online activities, it can be an understanding of an image even more than that, where the students can draw "the world." or express what they think by using the digital media they have. Therefore, to direct the students into good digital literacy skills, it is necessary to assist the parents so that students can use digital media well.

### Results of Critical Thinking and Evaluation Indicator Survey



**Figure 8.** the responses in doing the assignment using the mobile phone

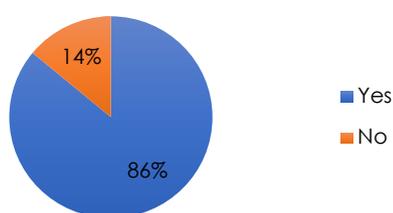


**Figure 9.** the responses in reading sourced on the internet

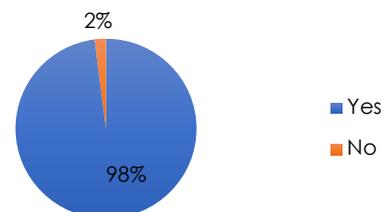
The results of the survey for indicators of critical thinking and evaluation show that students often use mobile phones to help with difficult things while doing the assignments. However, in Figure 9, the students prefer reading books to reading sourced on the internet, with a percentage of 86% versus 14%. This shows that the students prefer to find information related to learning by reading books, and only when they feel confused or have difficulty finding answers from books, the students use digital media. The ability of students to choose the right way to solve problems or difficulties in

this learning means that students have been able to integrate their ability to access useful and reliable information, then evaluate it and communicate this information as the fruit thinking (Colwell, et al. 2013). Therefore, students have indirectly carried out activities that direct themselves to develop critical thinking and evaluation attitudes, there are accessing learning resources such as online libraries, online learning media, online discussions, or online learning materials, these things are the positive impact of the digital era as explained by Setiawan (2015).

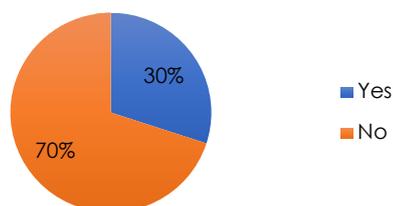
### Results of Cultural and Social Understanding Indicator Survey



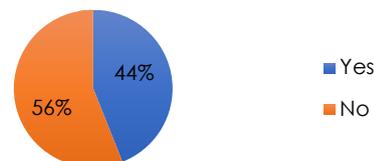
**Figure 10.** The Responses of reading sourced on the internet



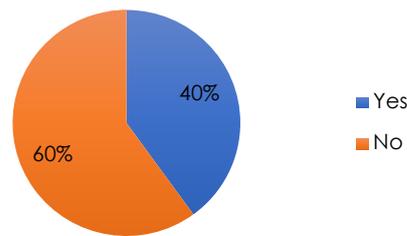
**Figure 11.** The Responses of direct learning



**Figure 12** The Responses of their drawings followed by friends



**Figure 13.** The Responses of their video followed by friends

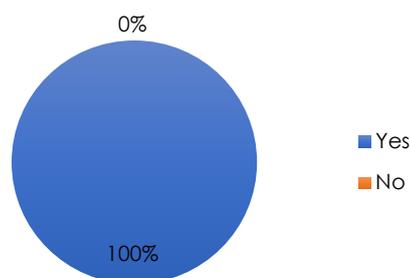


**Figure 14.** The Responses of joining activity done by friends

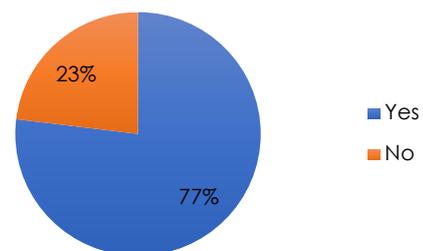
Indicators of cultural and social understanding in the digital literacy ability survey of the students show that the students preferred reading books to reading sourced on the internet, with a percentage of 86% versus 14%. This is reinforced by the results in Figure 11 that students tend to prefer direct learning with a percentage of 98% than to implement online learning. Learning using digital media during this pandemic helps students get new learning experiences that may not have been done before, but this is still not as fun or interesting as when they learn in the classroom, is because of the culture that is built in the community in teaching and learning activities, it is the school environment or especially the classroom environment. So that when students are faced with online learning schemes, the students tend to dislike them. Then, another survey included in other cultural and social understanding was that 70% of students felt that their friends had never followed the pictures they made using digital media, 56%

of students felt their friends had never followed dancing or singing videos that they made using digital media, and 60% of students did not feel like they followed what their friends did using digital media. Referring to this data, only a small proportion of about 36% of students felt that they had been followed by their friends, had participated in their friends' activities, and care about their friends' activities. Therefore, in this indicator, it can be concluded that students tend to lack inspirational attitudes or attitudes that can inspire their friends to carry out the same activities with them. This occurs because there are psychological forms in self-representation of students while using digital media, one is competence, where this form shows that digital media users want to be considered having skills and also quality (Pratiwi and Pritanova, 2017) so that students can display the best things or works according to themselves without following their friends or others.

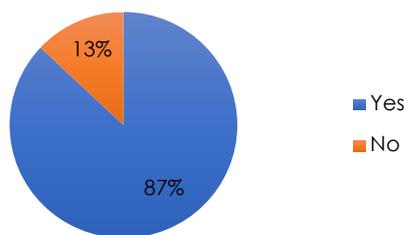
#### Results of Collaboration Indicator Survey



**Figure 15.** The ability to create a WhatsApp group



**Figure 16.** The ability to learn using Edmodo

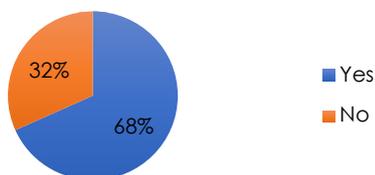


**Figure 17.** The ability to learn and giving opinion using Zoom

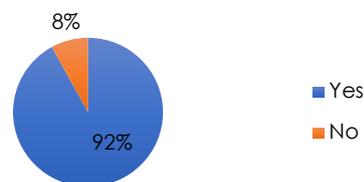
The collaboration indicator shows that 100% of students were able to create certain groups to exchange information with their friends or create learning groups on the WhatsApp application. When online learning was held, the students also had the opportunity to try other online-based learning applications such as Edmodo and Zoom. It is proven that 77% of students were able to use Edmodo and 87% of students can learn and ask questions through Zoom meetings. Referring to the data above, the students are used to and able to use online-based learning applications such as Edmodo and Zoom meetings, this means that the students have indirectly used their mobile phones to practice how to create accounts on Edmodo, how to access, send or post assignments on Edmodo, and also how to operate the video teleconferences through

Zoom meetings, enter id and password and practice which is usually held in the classroom. The use of features contained in mobile phones such as WhatsApp, Edmodo, and Zoom meetings can provide good benefits to students as long as there is assistance provided by parents. Parental assistance means that parents not only see the students when using mobile phones and accessing its features, but parents must be able to become a teacher for students to provide an understanding of what students can and cannot do while using it. (Warisyah, 2015). In this case, it can be concluded that students already have one of the abilities in digital literacy, it is collaboration.

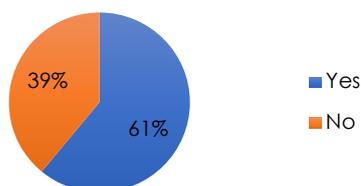
### Results of The Ability to Find and Select Information Indicator Survey



**Figure18.** The response in asking questions



**Figure19.** The habit of finding information using mobile phones

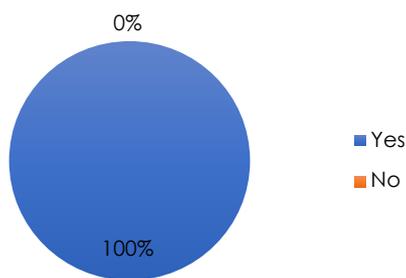


**Figure 20.** Disrespectful on what their friends do

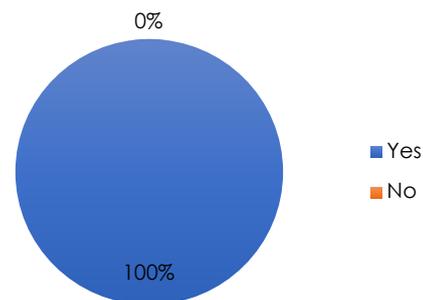
The indicator of the ability to find and select information on the figure shows that the students prefer to ask questions and get information related to learning directly from their friends than to ask using WhatsApp with a percentage of 68% versus 32%. This means that more than 50% of students have been able to determine their way of finding and selecting the information they want to get by face-to-face. Then, 92% of students when faced with a problem related to a learning assignment, they chose to find the information needed by accessing the internet using their mobile phones. And 61% of students tend to feel they didn't care about

the activities their friends did. Based on these data, the students have shown proficiency in determining how to find and select information well in learning activities. Meanwhile, someone who has digital literacy skills tends to be skilled in finding, evaluating, utilizing, sharing information and creating content using information technology and the internet (Cornell University, in Atoy., et al, 2020) which means that students have done the indicators of The Ability to Find and Select Information.

### Results of Effective Communication Indicators Survey



**Figure 21.** The ability to exchange information on WhatsApp

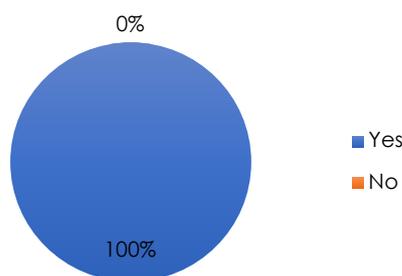


**Figure 22.** The ability to ask assignments to the Teacher on WhatsApp

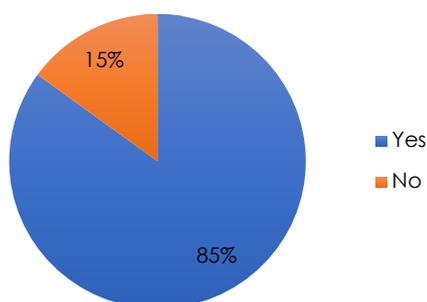
The next indicator is effective communication, the results show that 100% of students are able and accustomed to using WhatsApp to exchange information and ask questions about things that are not related to the teacher. This means that students have been able to take advantage of existing applications on mobile phones. So that it can be included in the indicators of effective communication or the formation of effective communication in students. This ability is in line with that presented by Hobbs (2010); Kwon and Hyun (2014) in (Atoy, et al, 2020) that the students who have good digital literacy skills will be better able to express their opinion and to find and understand the information they want so that students can express what he thinks well.

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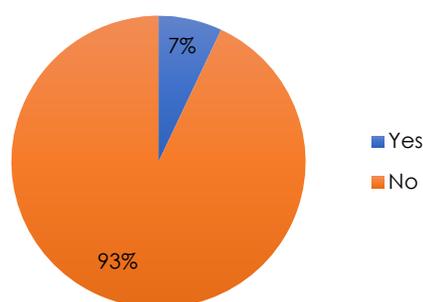
Results of E-safety Indicator Survey



**Figure 23.** The Habits of using mobile phone ICT devices.



**Figure 24.** The habits of using computer or laptop ICT devices.



**Figure 25.** The Problems of using mobile phones.

Based on the 3 figures above, it can be concluded that the respondents answered 3 questions differently. Figure 1 shows that all students (100%) can use mobile phones which is strengthened by the results of the survey in Figure 3 that 93% of students did not face problems using mobile phones, in the second figure, 85% of students chose to get used to it. and 15% of students chose not to be used to use computers or laptops. From the data above and seven other indicators, it can be known that the students can use the digital media they have well based on their needs, especially the needs to support learning activities during the pandemic. However, even though the students understand how to use digital media based on their needs, this does not make the use of digital media in student learning activities without the assistance of parents. Because

with the existing elementary school age range, the students still need parental assistance and supervision as long as they use digital media, both mobile phones and computers. This is to maintain the safety learning activities, especially during the online learning period.

### CONCLUSION

Distance learning activities (online) during the COVID-19 Pandemic in Indonesia had influenced the digital literacy of students, can be seen from the survey obtained from each development of digital literacy indicators, they show the development of digital literacy skills for the students positively such as functional skills, creativity, critical thinking and evaluation, the ability to find and select information, effective communication, and e-safety, only one



indicator in cultural and social understanding, a collaboration which is seen as not leading to growing the inspirational attitude to the students because in this indicator the students tend to pay attention to their existence and do not care about what their peers do. Therefore, it can be concluded that with this online learning, the students get more meaningful learning and experiences generally, and in particular, the students become more aware that their digital media have positive impacts on the learning process. Therefore, to develop good digital literacy skills, the teachers, parents, and students must always maintain a cooperative bond regarding learning process activities either online or not as well as possible.

## REFERENCES

- Aziz Mochamad Roikhan, Syam'aeni Asyep Muhammad, Sya'baniyah Nisfina, Fatimah Corrie Izzah. (2020). Peningkatan Kemampuan Literasi Digital bagi Siswa Kelas 4 dan 5 SDN Tanjakan 3, Kabupaten Tangerang. *Jurnal Pengabdian Pada Masyarakat*, 5(1), 141-148.
- Breakstone Joel, McGrew Sarah, Smith Mark, Ortega Teresa, and Wineburg Sam. (2018). Why we need a new approach to teaching digital literacy. *Kappanonline*, 1-6.
- Christina, D. (2011). Seeking the green basilisk lizard: Acquiring digital literacy practices in the home. *Journal of Early Childhood Literacy*, 12(1), 24-45.
- Colwell Jamie, Barron- Hunt Sarah, and Reinking David. (2013). Obstacles to Developing Digital Literacy on the Internet in Middle School Science Instruction. *Journal of Literacy Research*, 45(3), 295-324.
- Dewi, W. A. (2020, April). Dampak COVID-19 Terhadap Implementasi Pembelajaran Daring Di Sekolah Dasar. *Edukatif: Jurnal Ilmu Pendidikan*, 2(1), 55-61.
- Jr Atoy B Manny, Garcia O Renee Fransesca, Cadungog R Rayanne, Cua O Dominic Julius, Mangunay C Siena, and Guzman de B Allan. (2020). Linking Digital Literacy and Online Information Searching Strategies Of Philippine University Students: The Moderating Role Of Mindfulness. *Journal of Librarianship and Information Science (JOLIS)*, 1-13.
- Kemendikbud. (2020, Mei 29). *Kemendikbud Terbitkan Pedoman Penyelenggaraan Belajar dari Rumah*. Retrieved Juni 26, 2020, from Kemendikbud: <https://www.kemdikbud.go.id/main/blog/2020/05/kemendikbud-terbitkan-pedoman-penyelenggaraan-belajar-dari-rumah>
- Kumpulainen Kristiina, Sairanen Heidi, and Nordstrom Alexandra. (2020). Young Children's Digital Literacy Practices in The Sociocultural Context of Their Homes. *Journal of Early Childhood Literacy*, 1-28.
- Nama, T. (2020, Juni 16). *Gugus Tugas Percepatan Penanganan COVID-19*. Retrieved Juni 16, 2020, from Infografis COVID-19 (16 Juni 2020): <https://covid19.go.id/p/berita/infografis-covid-19-16-juni-2020>
- Nelson L Elizabeth, Perry Mia, and Rogers Theresa. (2020). Introducing Offlineness: Theorizing (Digital) Literacy Engagements. *Journal of Literacy Research*, 1-7.
- Pangarizo Luci, Godhe Anna-Lena, Ledesma Lopez Gonzales Alejo. (2020). What is digital literacy? A comparative review of publication across three language contexts. *E-Learning and Digital Media*, 1-18.
- Pratiwi Nani dan Pritanova. (2017, Februari). Pengaruh Literasi Digital terhadap Psikologis Anak dan Remaja. *SEMANTIK*, 6(1), 11-24.
- Setiawan, A. R. (2020). Lembar Kegiatan Literasi Sainifik untuk Pembelajaran



- Jarak Jauh Topik Penyakit Coronavirus 2019 (COVID-19). *Jurnal Edukatif*, 2(1), 28-37.
- Setiawan, W. (2017). Era Digital dan Tantangannya. 1-9.
- Sunita Indian, Mayasari Eva. (2018, Oktober). Pengawasan Orang Tua Terhadap Dampak Penggunaan Gadget Pada Anak. *Jurnal Endurance*, 3(3), 510-514.
- Syarifudin, A. S. (2020). Implementasi Pembelajaran Daring Untuk Meningkatkan Mutu Pendidikan Sebagai Dampak Diterapkannya Social Distancing. *METALINGUA: Jurnal Pendidikan Bahasa dan Sastra Indonesia*, 5(1), 31-34.
- Warisyah, Y. (2015). Pentingnya "Pendampingan Dialogis" Orang Tua Dalam Penggunaan Gadget Pada Anak Usia Dini. *Seminar Nasional Pendidikan "Inovasi Pembelajaran untuk Pendidikan Berkemajuan"* (pp. 130-138). Ponorogo: FKIP Universitas Muhammadiyah Ponorogo.
- Yanti Tirta Minanti, Kuntarto Eko, Kurniawan Rimba Agung. (2020, April). Pemanfaatan Portal Rumah Belajar KEMENDIKBUD Sebagai Model Pembelajaran Daring di Sekolah Dasar. *Adi Widya: Jurnal Pendidikan Dasar*, 5(1), 61-68