Jurnal Paedagogy:
Jurnal Penelitian dan Pengembangan Pendidikan
https://e-journal.undikma.ac.id/index.php/pedagogy/index
Email: paedagogy@undikma.ac.id

Vol. 9 No. 4 : October 2022
p-ISSN: 2355-7761
e-ISSN: 2722-4627
pp. 824-833

The Effectiveness of Online Mathematics Subject Learning During the Covid-19 Pandemic at SD Muhammadiyah 49 Jakarta

Siti Masyitoh*, Muhib Rosyidi
Primary Teacher Education Study Program, Faculty of Teacher Training and Education,
Universitas Muhammadiyah Prof. Dr. Hamka
*Corresponding Author. Email: itsmeitoh@gmail.com

Abstract: This study aims to analyze the effectiveness of online mathematics subject learning during covid-19. This study used a mixed method with the fifth-graders of SD Muhammadiyah 49 Jakarta Pusat as the study's subjects. This study used observation, questionnaires via a Google form, and interviews as the data collection technique. The data analysis technique used descriptive analysis. The study's results showed that online learning had been effective as seen from the learning process, and the learning objectives that have been achieved. The learning process was running effectively, as seen from several aspects, including the learning process using learning media and seeing interactions between students and teachers. Then, from the outcome aspects, including the achievements made after the learning process, such as the level of student's comprehension.

Article History
Received: 12-07-2022
Revised: 18-08-2022
Accepted: 14-09-2022
Published: 21-10-2022

Key Words:
Effectiveness; Online Learning; Mathematics.

How to Cite: Masyitoh, S., & Rosyidi, M. (2022). The Effectiveness of Online Mathematics Subject Learning During the Covid-19 Pandemic at SD Muhammadiyah 49 Jakarta. *Jurnal Paedagogy*, *9*(4), 824-833. doi:https://doi.org/10.33394/jp.v9i4.5576

https://doi.org/10.33394/jp.v9i4.5576

Introduction

The emergence of the latest coronavirus variant in 2021 caused a commotion all over countries. The latest coronavirus has an impact on various aspects, one of which is education in elementary school since education was a learning environment for students to explore their potential or abilities in terms of character and attitude, which was implemented through daily activities that had benefits for themselves and others (Arifin & Chotimah, 2021). Due to the advent of the omicron coronavirus, the implementation of learning will return in 2020, which is online learning that is so far known as synchronous and asynchronous learning. The process of using learning resources is a shared choice that spreads swiftly through electronic learning media (e-learning), and it is challenging to shift from using learning resources in the classroom. In brief, although technology had advanced, the conventional face-to-face interaction method was much more effective than online learning, so the technology adopted could not replace face-to-face learning (Effendi, Fatimah, & Amam, 2021).

As we all know, mathematics is a subject with little interest shown by the low ability to solve math problems, other than the infrequent use of open-ended questions, which is also due to the low student interest in learning. According to the research conducted by (Lestari & Afriansyah, 2021), the factors that caused students to have difficulty solving questions were passive class conditions, in which students were less involved in learning. Samsiyah (Sapitri, Utami, & Mariyam, 2019) stated that exercises still dominated math learning conducted by teachers for mastering basic mathematical skills only, in which they paid less attention to student learning activities that led to divergent thinking since they did not consider analyzing their students' problem-solving skills. Instead, they only provide routine questions during

Jurnal Paedagogy:
Jurnal Penelitian dan Pengembangan Pendidikan
https://e-journal.undikma.ac.id/index.php/pedagogy/index
Email: paedagogy@undikma.ac.id

Vol. 9 No. 4 : October 2022
p-ISSN: 2355-7761
e-ISSN: 2722-4627
pp. 824-833

learning and evaluation. Therefore, that caused a lack of students in learning math (Sapitri et al., 2019). Students find it difficult to learn and require a process to be understood because online learning time is limited. Therefore, it is tough for teachers to interact appropriately with students during the online learning process since online learning differs from face-to-face learning at school.

On the other hand, interest significantly impacts students' learning, indirectly impacting their abilities. It is in line with Holidun's (2017) research that showed students with high learning interests could correctly solve questions from each level of problem-solving. Students with moderate interests in solving questions meet all indicators even though some other stages are less systematic. In contrast, students with low-interest categories are able to complete the stage of understanding and planning the problem even though it is not optimal. In addition, based on the results of Farahiya's research (2017), it was stated that students with a high interest in learning could execute all problem-solving indicators but not entirely yet. In contrast, students with a moderate interest in learning can only master the indicators of problem-solving skills. Based on these research results, it can be concluded that students' interests in learning are still lacking.

It is undeniable that many factors influence the learning's effectiveness, such as in terms of students who still lack a sense of responsibility in implementing learning, resulting in late submission of assignments. In terms of families, some parents leave their children in the care of the school or teachers, whereas in this case, the role of parents is urgently needed to help students carry out their obligations since support and cooperation are needed. Then, in terms of facilities, we could not deny that online learning really needed learning media as a tool to support the learning process from home, like laptops, cell phones, internet networks, and others (Maria, Pendidikan, & Padang, 2021). The usage of other media certainly has benefits, such as facilitating students' access to learn the materials and allowing discussion anytime and anywhere through applications provided by the school. The devices used could also be stored on mobile phones, such as educational videos, so that it made students more productive in their spare time by repeating the video regularly to improve students' comprehension of the learning materials (Sefriani, Sepriana, Wijaya, Putra, & Yptk, 2021).

Nowadays, teachers and students can use technology as a learning media to facilitate daily teaching and learning activities. For that reason, educators should be able to create a more interactive learning atmosphere when using learning media so that students do not become disinterested while participating in online learning. Furthermore, students had to obey the rules established by the teacher by doing assignments on time because the teacher had tried to deliver the materials as effectively as possible (Marbun, Sinaga, Keguruan, Hkbp, & Medan, 2021). Implementing curriculum learning was also crucial because students were urged to be more able to apply things like reasoning, ask questions, and actively follow a process to bring out effective learning. (Wahyuni, Gistituati, & Bentri, 2021).

The learning effectiveness results from the implementation after the teaching and learning process is carried out. If the key elements of learning, discussion, adaptation, interactivity, and reflection are filled from several interrelated elements of the learning zone, then using online learning is very effective. It was included as a component of the digital learning ecosystem (Sutini et al., 2020). The effectiveness theory states that comparing results with the goals achieved is interconnected. As a result, effectiveness provided an achievement to be accomplished and, certainly, went through the process by looking at the extent to which the goals have been achieved (Sourial, Longo, Vedel, & Schuster, 2018). Learning effectiveness concludes that learning is passed through the learning process, such as learning

Jurnal Paedagogy:
Jurnal Penelitian dan Pengembangan Pendidikan
https://e-journal.undikma.ac.id/index.php/pedagogy/index
Email: paedagogy@undikma.ac.id

Vol. 9 No. 4 : October 2022
p-ISSN: 2355-7761
e-ISSN: 2722-4627
pp. 824-833

is considered effective if students can be active during the learning process (Gita Andreani, Damaiyanti, & Magdalena, 2021). One of the learning methods that used media to communicate online and disrupt the learning process was known as online learning. During online learning, the teacher took the initiative to visit several houses and conduct group classes (Handayani, Masfuah, & Kironoratri, 2021). The concept of math learning has several functions, including carrying out activities such as counting and enhancing knowledge about a systematic mindset (Jarmita, 2014). According to Google, the Google Form application is one of the built-in features that can provide forms for filling out data online and has functions for users while validating data and enlightening information. However, since the application requires a decent internet connection, teachers and students must also have facilities to help them participate successfully in the online learning process (Rosmita, 2020).

Suharta in (Rahayu condro murti, 2009) claimed that learning math in the classroom should emphasize mathematical concepts and children's everyday experiences. De Lange in Suharta 2009 described the mathematization concepts that were closely related to the real world, in which learning began with contextual problems that students encountered in their lives. It allowed students to apply prior learning directly. According to the 2013 curriculum, learning tools with a scientific approach are mathematical learning tools. The scientific approach is a requirement in the 2013 curriculum. Before discussing the scientific approach, it was necessary to understand more about the scientific method (Wayan, Permana, Suharta, & Ardana, 2014).

Various digital platforms are used in this learning model. Starting from learning management systems (LMS), instant messenger like WhatsApp, and social media like Youtube and Instagram, to conference platforms such as Zoom Meeting, Webex, and Google meeting (Sadikin & Hamidah, 2020). However, this learning model still has to be studied to discover the right approach so that its application becomes effective and efficient. According to Agung Rachmad dan Iwan Krisnandi (2020) and Widiyono (2020), online learning is less effective and closely related to students' lack of comprehension in the learning process. This method was ineffective due to slow internet, limited quota, and an environment limited by digital devices (Musu, Simpen, & Samsie, 2021).

Rusman (2013) stated that, in general, a teacher was a very dominant determining factor in education since the teacher played a role in the learning process, where learning process was the core of the entire educational process (Rohmawati, 2015). Many students consider math challenging, especially nowadays, when learning is conducted online. It is also one of the factors that cause students to consider math very difficult. Since mathematics is not only about numbers, it is much more complex than that. Many abilities can be developed from learning math, including problem-solving, mathematical communication and connections (Yuliza, 2020; see also Izzah, Bahar, & Yanti, 2020). This study aims to analyze the effectiveness of online mathematics subject learning during covid-19 at SD Muhammdiyah 49 Jakarta.

Research Method

This study used a mixed method, which combined quantitative to complement the qualitative method; while the dominant method was descriptive qualitative research as the core of the problem to be studied that was supported by literature reviews to strengthen the research results obtained. (Huda, 2010). The research subject was 30 students in fifth grade at the SDS Muhammadiyah 49. The instrument for collecting data in this study was a questionnaire consisting of 4 indicators in the form of 10 available questions. The following

Jurnal Paedagogy:
Jurnal Penelitian dan Pengembangan Pendidikan
https://e-journal.undikma.ac.id/index.php/pedagogy/index
Email: paedagogy@undikma.ac.id

Vol. 9 No. 4 : October 2022
p-ISSN: 2355-7761
e-ISSN: 2722-4627
pp. 824-833

are the indicators in the questionnaire: the utilization of learning media, the interaction or communication between students and teachers, and materials comprehension. After students filled out the data, the next step analyzed the percentage of existing scores and the results obtained.

The data analysis technique used was an interactive model analysis from Miles and Huberman. Miles dan Huberman (Puspita, Slameto, & Setyaningtyas, 2018) explained that implementing activities consistently until the end and analyzed through data reduction, data display, and conclusion drawing/verification. The mixed method design was quantitative, which was specific, clear, detailed, determined steadily from the start, and became a step-by-step guide, while the qualitative was general, flexible, and emerged in the research process (Mustaqim, 2016).

Results and Discussion

The data obtained from collecting student questionnaires were then used to create a table that describes the findings using the percentage technique. The purpose of data processing is to explain the results of student questionnaires so that each question item must be adjusted. Then, a conclusion can be drawn from the problems that have been studied. In the research process (data processing), the researcher undergoes several processes: the first is editing, which is after the respondents fill out the questionnaire and return it to the researcher, the researcher immediately reviews the completeness of filling out the questionnaire. If any questions remain answered, the researcher will contact the respondent to complete the answer so that the questionnaire is valid. The second is tabulating, which involves data processing by transferring the questionnaire's responses into tabulations or tables. Then, the data is processed to declare the questionnaire results valid. The next step is to analyze the data using descriptive techniques with percentages. The third is analyzing, which involves analyzing the verbally processed data to make the study findings easy to understand. Finally, concluding provided conclusions from the results data interpretation analysis (Huda, 2010). The following are the data obtained from the results of the questionnaire distributed to students:

Students comprehend the use of technology well as a learning media (e.g. accessing the internet, sending assignments via google classroom or WhatsApp Group)

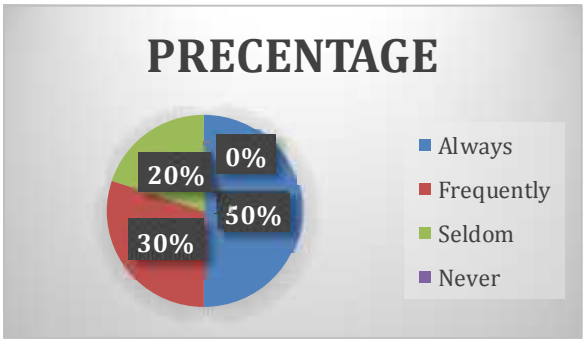


Chart 1. Students' Responses on Using Technology as A Learning

The following chart shows that (50%) of respondents can always use technology well as a learning medium during online learning, indicating that learning is very effective. (30%) of respondents stated that they can only occasionally use it since they still do not understand the use of technology. Also, (20%) still require the assistance of others, like parents or siblings who accompany them during online learning to be able to use those technologies. Technology is one of the most important media in online learning since if do not understand how to utilize

Jurnal Paedagogy:
Jurnal Penelitian dan Pengembangan Pendidikan
https://e-journal.undikma.ac.id/index.php/pedagogy/index
Email: paedagogy@undikma.ac.id

Vol. 9 No. 4 : October 2022
p-ISSN: 2355-7761
e-ISSN: 2722-4627
pp. 824-833

it; it will be difficult to find the information needed to accomplish the tasks assigned by the teachers.

Teachers use audio-visual media (e.g images and videos) in the math subject

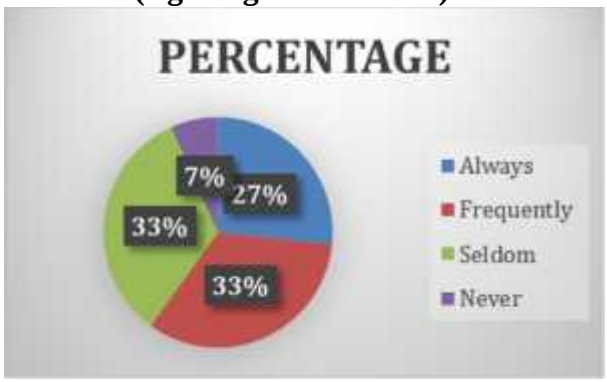


Chart 2. Students' Responses on the Use of Audio-Visual Media

According to the chart, during mathematic learning, (33,3%) of teachers do not always utilize videos for learning, and (26,7%) of teachers stated that they always use audio-visual media in the form of videos which are usually shared via the class WhatsApp group. At the same time, (6,7%) of respondents stated that they never utilize audio-visual media such as images and videos as tools to support math material comprehension.

Students always utilize learning media (such as: Laptop, cell phones, Quota, etc) during the learning process

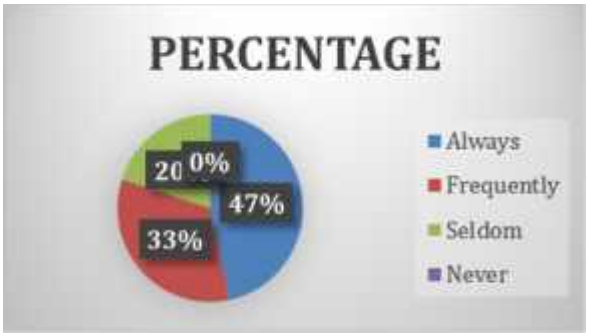


Chart 3. Students' Responses on the Use of Learning Media Like Laptop

The study's results above state that (46%) of respondents always use learning media, indicating that they have adequate facilities for an efficient online learning process. It shows that students have access to adequate learning media facilities, while (33%) claimed that many students use learning media devices, and only (20%) seldomly use the learning media.

Students frequently ask questions during the learning process

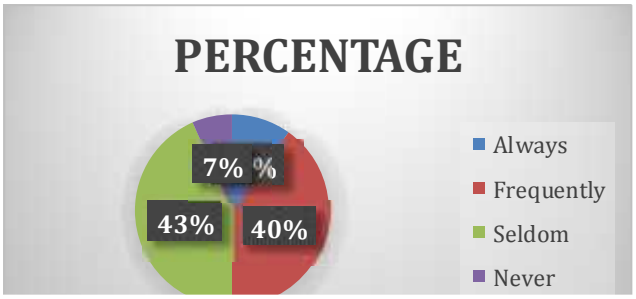


Chart 4. Students' Responses on Asking Questing During the Learning process

Jurnal Paedagogy:
Jurnal Penelitian dan Pengembangan Pendidikan
https://e-journal.undikma.ac.id/index.php/pedagogy/index
Email: paedagogy@undikma.ac.id

Vol. 9 No. 4 : October 2022
p-ISSN: 2355-7761
e-ISSN: 2722-4627
pp. 824-833

The chart above states that most respondents (43,3%) seldomly ask questions during online learning, which is less effective in the learning process. Then, followed by (40%) of respondents frequently ask questions when learning is taking place in line with the learning objectives, in which students actively follow online learning. (10%) of respondents always ask questions, which is very effective, and only (6,7%) of respondents never ask questions.

The teachers' voices are clearly heard when delivering the material through learning media (e.g. Google Meeting or Zoom Meeting)

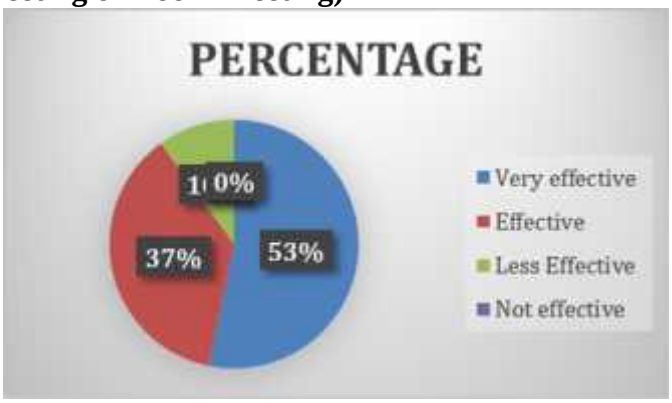


Chart 5. Students' responses on the teacher' voice when delivering the material through learning media such as zoom meeting

The chart above shows that almost all respondents (53,3%) heard the teachers' voices clearly, which means it is very effective at delivering mathematics subject matter that aims to facilitate direct interaction between teachers and students using Google Meeting. Then, (36,7%) of respondents claimed that the teachers' voices are sometimes unclear due to several external factors that cause students to be distracted by the teachers' voices while explaining the material, and (10%) of respondents stated that the teachers' voices are not clearly heard when explaining the material.

Students encounter obstacles during the learning process (e.g. slow internet connection, insufficient internet quota, etc.)

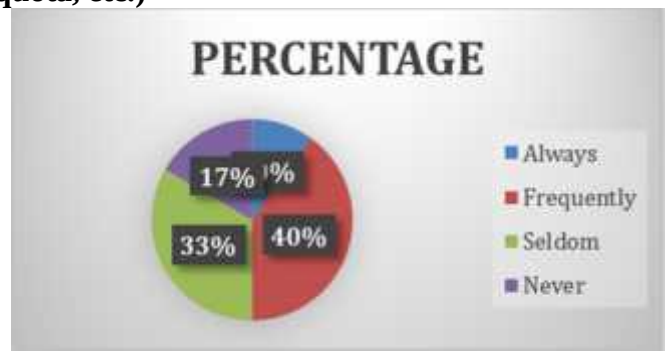


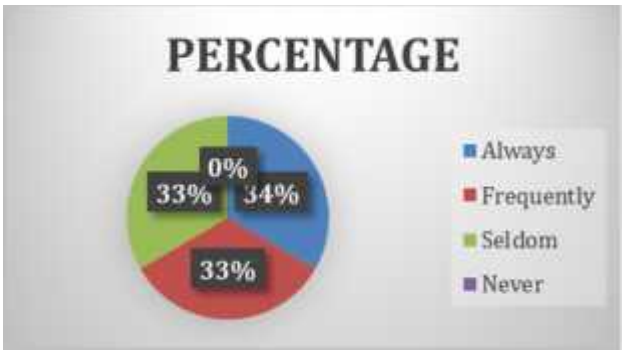
Chart 6. Students' responses on the obstacles during the learning process

According to the chart above, (40%) of respondents frequently encounter obstacles, which greatly interrupt the learning process due to the slow internet connection, while (33,3%) of respondents seldomly encounter obstacles, which means students can handle or overcome the problems related to those. Then, (16,7%) of respondents have never encountered problems, and (10%) of respondents have always encountered problems during the learning process.

Students can comprehend the mathematics subject well

Jurnal Paedagogy:
Jurnal Penelitian dan Pengembangan Pendidikan
https://e-journal.undikma.ac.id/index.php/pedagogy/index
Email: paedagogy@undikma.ac.id

Vol. 9 No. 4 : October 2022
p-ISSN: 2355-7761
e-ISSN: 2722-4627
pp. 824-833



Grafik 7. Students' responses on comprehend the math subject

The above chart illustrates that (33,3%) of respondents always comprehend mathematics subject matters well. Then, (33,3%) of respondents frequently comprehend the material well, indicating that learning is effective, while (33,3%) of respondents seldom understand the material due to the influence of various external and internal factors.

Students can recall the materials that the teacher has taught them

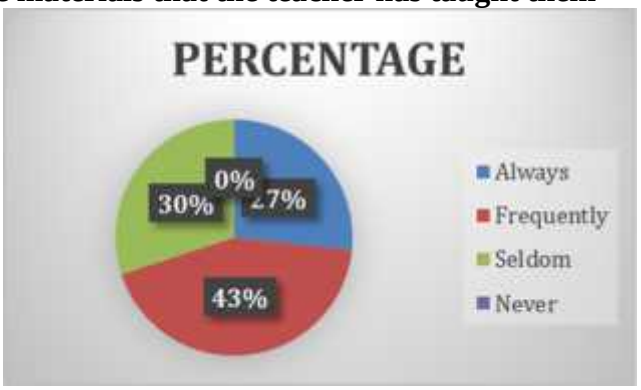


Chart 8. Students' responses on recall the materials that have been taught by the teacher

The chart above describes (43,3%) of respondents stated that during the learning process, students are trained to remember the basic concepts that the mathematics teacher has taught for learning to be considered effective. However, (30%) of respondents claimed that learning is less effective when it comes to recalling the materials that have been taught. At the same time, (26,7%) of respondents can always recall the materials that have been taught, which shows that online learning is very effective since students can explain the materials that have been taught.

Students can correctly answer the questions given by the teachers

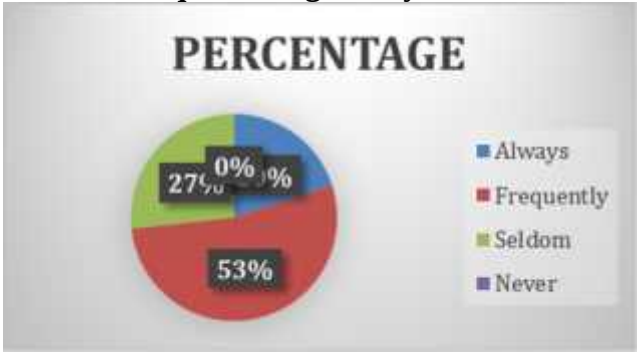


Chart 9. Students' responses to answer the materials correctly

Jurnal Paedagogy:
Jurnal Penelitian dan Pengembangan Pendidikan
https://e-journal.undikma.ac.id/index.php/pedagogy/index
Email: paedagogy@undikma.ac.id

Vol. 9 No. 4 : October 2022
p-ISSN: 2355-7761
e-ISSN: 2722-4627
pp. 824-833

The chart above shows that (53,3%) of respondents frequently provided correct answers to questions or assignments from the teachers, and (26%) stated that students had difficulties, so they seldom answered questions correctly. Only a small percentage (20%) of respondents could always answer the questions given by the teacher correctly.

Students can elaborate on the explanations from the provided answers (such as using the right formula)

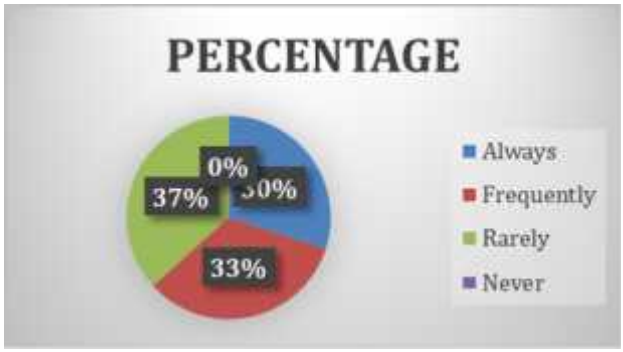


Chart 10. Students' responses on they can elaborate their answers

The chart illustrates that (36,7%) of respondents are rarely able to re-present or explain their answers. Then, (33,3%) of respondents claimed that they could answer and elaborate on the explanations using the right formula so that it can be said to be effective in participating in learning, and (30%) of respondents are always able to elaborate on their explanations.

According to the results of the research that has been carried out, the effectiveness of math online learning during COVID-19 has been running effectively. The results showed that (a) students always understand well the use of technology as a learning media, (b) teachers often use audio-visual media in math lessons, (c) students always use laptops and cell phones during the learning process, (d) students frequently ask questions during the learning process, (e) the teachers' voices are always clearly heard when delivering the materials via Zoom Meeting, (f) students are seldomly encountered obstacles during the learning process, (g) students can comprehend the math materials well, (h) students frequently recall the materials that have been taught by the teachers, (i) students frequently answered correctly the questions given by the teachers, (j) students are rarely able to decipher the formula used in math learning (Gita Andreani et al., 2021). The learning process and objectives that have been achieved are running effectively, as seen from several aspects, such as the learning process using learning media and observing the interaction between teachers and students. In addition, from the aspect of results, including the accomplishments obtained after the learning process like students' comprehension level (Qolbi & Perwitasari, 2022).

Conclusion

The study concludes that online learning runs effectively in terms of process and outcomes during online learning. The learning process and objectives that have been achieved are running effectively, as seen from several aspects, such as the learning process using learning media and observing the interaction between teachers and students. In addition, from the aspect of results, including the accomplishments obtained after the learning process like students' comprehension level.

Vol. 9 No. 4 : October 2022
p-ISSN: 2355-7761
e-ISSN: 2722-4627
pp. 824-833

Recommendation

Recommendation for teachers can be provided from the research results activities are as follows: (1) preferably, during online learning, the teacher can train students to be able to explain or describe the materials they have learned so that they can comprehend them rather than only memorizing them. (2) the need for regular direct assistance to students to be able to discuss or interact with the subject matter or matters unrelated to it with them.

References

Arifin, M., & Chotimah, S. (2021). Analisis Efektifitas Pembelajaran Matematika Secara Daring Siswa SMP di Kabupaten Bekasi Selama Masa Pandemi Covid-19. *Jurnal Cendekia : Jurnal Pendidikan Matematika*, *5*(3), 2452–2459. https://doi.org/10.31004/cendekia.v5i3.875

Effendi, A., Fatimah, A. T., & Amam, A. (2021). Analisis Keefektifan Pembelajaran Matematika Online Di Masa Pandemi Covid-19. *Teorema: Teori Dan Riset Matematika*, *6*(2). https://doi.org/10.25157/teorema.v6i2.5632

Gita Andreani, M., Damaiyanti, F., & Magdalena, I. (2021). Efektifitas Pembelajaran Jarak Jauh Terhadap Siswa Sekolah Dasar Negeri Pasanggrahan II. *Cerdika: Jurnal Ilmiah Indonesia*, *1*(2), 141–145. https://doi.org/10.36418/cerdika.v1i2.19

Handayani, S., Masfuah, S., & Kironoratri, L. (2021). Analisis Kemampuan Komunikasi Siswa dalam Pembelajaran Daring Siswa Sekolah Dasar. *Edukatif : Jurnal Ilmu Pendidikan*, *3*(5), 2240–2246. Retrieved from https://edukatif.org/index.php/edukatif/article/view/770

Huda, A. (2010). Efektifitas Pemanfaatan Media Presentasi Pada Mata pelajaran Pendidikan Agama Islam (Studi Kasus di MAN 04 Model Pondok Pinang Jakarta Selatan). *Pendidikan Agama Islam UIN Syarif Hidayatullah*, 90.

Izzah, L., Bahar, H., & Yanti, W. (2020). Efektivitas Pembelajaran Matematika Daring Melalui Quantum E-Learning Pada Masa Pandemi Covid-19 Di SMK Grafika. *Prosiding Seminar Nasional Penelitian ...*, (1), 1–10. Retrieved from https://jurnal.umj.ac.id/index.php/semnaslit/article/view/8823

Jarmita, N. (2014). Kesulitan Pemahaman Konsep Matematis Siswa Dalam Pembelajaran Matematika Di Kelas Awal Sekolah Dasar. *PIONIR: Jurnal Pendidikan*, *4*, 1–16. Retrieved from https://jurnal.ar-raniry.ac.id/index.php/Pionir/article/view/176/157

Lestari, A. B., & Afriansyah, E. A. (2021). Kemampuan Pemecahan Masalah Matematis Siswa Smp Di Kampung Cibogo Pada Materi Spldv. *Sigma: Jurnal Pendidikan Matematika*, *13*, 92–102.

Marbun, J., Sinaga, S. J., Keguruan, F., Hkbp, U., & Medan, N. (2021). *Jurnal basicedu*. *5*(5), 3299–3305.

Maria, R., Pendidikan, A., & Padang, U. N. (2021). *EDUKATIF : JURNAL ILMU PENDIDIKAN Efektivitas Pembelajaran dan Pembinaan Karakter di Masa Pandemi Covid-19*. *3*(4), 1503–1512.

Mustaqim. (2016). Metode Penelitian Gabungan Kuantitatif Kualitatif / Mixed Methods Suatu Pendekatan Alternatif. *Jurnal Intelegensia*, *04*(1), 1–9. Retrieved from https://ejournal.unisnu.ac.id/JI/article/view/1351

Musu, W., Simpen, W., & Samsie, I. (2021). Identifikasi Pola Pembelajaran Daring dimasa Pandemi Covid-19 menggunakan Teknik Data Mining. *Jurnal_Pekommas*, *11*, 11–20. https://doi.org/10.30818/jpkm.2021.2060302

Vol. 9 No. 4 : October 2022
p-ISSN: 2355-7761
e-ISSN: 2722-4627
pp. 824-833

Puspita, M., Slameto, S., & Setyaningtyas, E. W. (2018). Peningkatkan Hasil Belajar Matematika Siswa Kelas 4 Sd Melalui Model Pembelajaran Problem Based Learning. *Justek : Jurnal Sains Dan Teknologi*, *1*(1), 120. https://doi.org/10.31764/justek.v1i1.416

Qolbi, S. K., & Perwitasari, N. (2022). *Jurnal basicedu*. *6*(2), 1551–1562.

Rahayu condro murti. (2009). Meningkatkan Kemampuan Matematika Di Sekolah Dasar Dengan Menggunakan Model Pembelajaran Sosiokultur. *Jurnal Penelitian Ilmu Pendidikan*, Vol. 02, pp. 166–178.

Rohmawati, A. (2015). Efektivitas Pembelajaran Afifatu. *Jurnal Pendidikan Usia Dini*, *9*(1), 15–32. Retrieved from e-mail: paud.ppsunj@gmail.com%0AAbstract:

Rosmita. (2020). *skripsi rosmita*. 151–156.

Sadikin, A., & Hamidah, A. (2020). Pembelajaran Daring di Tengah Wabah Covid-19. *Biodik*, *6*(2), 214–224. https://doi.org/10.22437/bio.v6i2.9759

Sapitri, Y., Utami, C., & Mariyam, M. (2019). Analisis Kemampuan Pemecahan Masalah Matematis Siswa dalam Menyelesaikan Soal Open-Ended pada Materi Lingkaran Ditinjau dari Minat Belajar. *Variabel*, *2*(1), 16. https://doi.org/10.26737/var.v2i1.1028

Sefriani, R., Sepriana, R., Wijaya, I., Putra, U., & Yptk, I. (2021). *EDUKATIF : JURNAL ILMU PENDIDIKAN Efektivitas Pembelajaran Online di Masa Pandemi Covid-19*. *3*(6), 4731–4737.

Sourial, N., Longo, C., Vedel, I., & Schuster, T. (2018). Daring to draw causal claims from non-randomized studies of primary care interventions. *Family Practice*, *35*(5), 639–643. https://doi.org/10.1093/fampra/cmy005

Sutini, S., Mushofan, M., Ilmia, A., Yanti, A. D., Rizky, A. N., & Lailiyah, S. (2020). Efektivitas Pembelajaran Daring dengan Menggunakan E-learning Madrasah Terhadap Optimalisasi Pemahaman Matematika Siswa. *JRPM (Jurnal Review Pembelajaran Matematika)*, *5*(2), 124–136. https://doi.org/10.15642/jrpm.2020.5.2.124-136

Wahyuni, Y., Gistituati, N., & Bentri, A. (2021). *Jurnal basicedu*. *5*(6), 5556–5564.

Wayan, N., Permana, D., Suharta, I. G. P., & Ardana, I. M. (2014). PENGEMBANGAN PERANGKAT PEMBELAJARAN MATEMATIKA DENGAN PENDEKATAN SCIENTIFIC BERORIENTASI TEKNOLOGI INFORMASI DAN KOMUNIKASI UNTUK MENINGKATKAN KEMAMPUAN PEMECAHAN MASALAH DAN PENALARAN SISWA Ni. *E-Journal Program Pascasarjana Universitas Pendidikan Ganesha*, *3*(10), 1–12. Retrieved from http://oldpasca.undiksha.ac.id/e-journal/index.php/JPM/article/view/1365

Widiyono, A. (2020). Efektifitas Perkuliahan Daring (Online) pada Mahasiswa PGSD di Saat Pandemi Covid 19. *Jurnal Pendidikan*, *8*(2), 169–177. https://doi.org/10.36232/pendidikan.v8i2.458

