The Effectiveness of Online Learning Using Zoom Meetings at Elementary Schools

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Article Info	Abstract
	This study aimed to describe the effectiveness of using Zoom Meetings, as one of the online learning platforms, in the learning process at the select school of elementary school. The purposive survey method was used in this study involving the process of data triangulation from tests, questionnaires, and unstructured interviews. Sampling in this study is random sample or probability sampling is a sampling technique that uses technical opportunities in the sampling process. A sample of 160 students select school participated in this study by filling out questionnaires distributed online. Student responses were analyzed descriptively quantitatively to determine the using of Zoom Meeting the implementation of learning. Data was collected using a five-item Likert scale survey. Based on the results of data analysis from filling in student questionnaires, it can be concluded that the online learning system using Zoom in elementary schools is effectively used, with the percentage of students understanding learning is 72.50%.

Introduction

Digital literacy, according to Paul Gilster's book Digital Literacy (1997), is described as the ability to comprehend and utilize information in various forms from a wide range of sources accessed through computer equipment. During the COVID-19 epidemic, elementary school pupils were taught digital literacy. In this day of globalization, a teacher must be able to set an example for children who enjoy reading. Because a teacher's example, such as reading extensively at the school library or in the teacher's office, might pique kids' interest in reading. Every conduct carried out by a teacher is frequently seen, observed, and imitated by students. This literacy culture is inextricably linked to the realm of education; in fact, some argue that literacy culture and education are inextricably linked. Mastery of literacy is a key determinant of a younger generation's ability to attain success.

Nadiem Anwar Makarim, Minister of Education, Culture, Research and Technology has developed a national-level education platform that can be used by teachers and students throughout Indonesia to interact, learn, and share. This aims to optimize the role of right-targeted technology to provide educational services for children during the COVID-19 pandemic. The application of technology must be used appropriately and competently. Right on target means being able to answer challenges in the education system, namely the quality of learning and access to quality education (Kemdikbud, 2021).

The COVID-19 pandemic has changed the pattern of education from face-to-face learning to online learning. The online learning process has become commonplace in the world of education. Currently, the learning process can be done not only in the classroom but can be done online. This is supported by the opinion of (Smaldino, Lowther, & Mims, 2015) that learning activities in the digital era are carried out inside or outside the classroom using easily accessible computer-based technology as a learning resource.

The benefits of online learning are increasingly recognized after many schools have implemented online learning systems to prevent the transmission of the COVID-19 virus. The Indonesian government is still implementing an online learning policy to prevent the spread of COVID-19 in schools. This policy led to social restrictions and the cessation of face-to-face learning. Face-to-face learning is temporarily changed to online learning.

Online learning is interactive. Students can interact with teachers and other students through online learning media. The use of online learning media in the future will produce better and more effective learning outcomes than face-to-face learning. Because online learning media is attractive, accessible, and flexible. Online learning media is used as a means to increase the effectiveness and efficiency of learning. Online learning media can overcome the limitations of space and time, generate enthusiasm for learning, and provide opportunities for students to interact directly with their learning environment. This is following the opinion (Sanjaya, 2014) that learning objectives can be achieved easily when students are allowed to study independently according to their interests and passions.

There are also challenges in online learning, which require a stable internet network, a conducive learning atmosphere, and full support from parents. During the COVID-19 pandemic, students must continue to study. The interaction between teachers and students must be effective and the solution is the use of online learning applications. The results of observations in the field show that the learning application that is often used during distance learning is Zoom Meetings. Many schools in Indonesia are already using the Zoom in online learning.

The advantage of the zoom application is that it is free of cost, can be used by anyone, anywhere, and anytime without having to meet face to face. Through the use of Zoom, we can communicate directly with anyone via video. Zoom is an application that is used to assist the face-to-face learning process using video (Ganesha, Nandiyanto, & Razon, 2021). Videos can also be recorded, downloaded, viewed, or played back. One of the advantages of Zoom is the application of technology that can bridge space and time and is flexible in the learning process (Bawanti & Arifani, 2021).

There are also other advantages of Zoom that are ease of use, quality, and immediate success through Zoom. The display features are neatly arranged, easy to find, practical, and easy to use. larger meeting room capacity. quality video and sound production. It displays a presentation file that can be sent to all meeting participants. Teachers can easily make learning schedules through meeting schedule settings. The teacher can determine the topic of learning, the description of the learning to be carried out, the learning time, and the duration of learning. The availability of access links to participate in activities according to a predetermined schedule. The record feature to record and save learning videos is easy to use. The breakout room feature can make it easier for teachers and

students to conduct virtual discussions. In the Zoom meeting application, the breakout room is separated from the main meeting room. Teachers can divide students into small groups so that teachers and students are separated to maximize learning activities. With the breakout room, students have a private space to carry out discussion activities. Through this breakout room feature, students can have a virtual discussion learning experience to increase their confidence. During a meeting, you can view diagnostic information to determine whether the problem is caused by audio, video, or the network (Sutterlin, 2018; Setiani, 2020). It can be concluded that Zoom has complete facilities and is suitable for use as an interesting online learning medium.

The results of the study (Serhan, 2020) show that student interaction during zoom learning is lower than student interaction in the classroom. But students love the flexibility and convenience of zooming in. This follows the results of research (Suardi, 2020) concluding that the learning process using Zoom cloud meetings is very effective because it is more relaxed than face-to-face learning.

Several studies examine students' perceptions and attitudes using Zoom, Peiyan Cai (2021) "Thinking skills development in mobile learning: The case of elementary school students studying environmental studies", the results obtained, it can be concluded that mobile learning with use zoom meeting platforms in the context of elementary school can be effective and have a positive effect on the development of children's thinking skills provided that it is properly organized and the above recommendations are followed, and Mahhabah (2020) conducted a study entitled " An Analysis Of Students' Perception About The Efficiency Of Using Of Zoom Cloud Meeting For Online Learning During Pandemic Covid 19" home learning policy by implementing online learning using the Zoom application for face-to-face learning, lecture materials and assignments for online learning media learning will be provided.

The test results found that online learning with Zoom meetings is effective. This study attempts to describe the effectiveness of using Zoom during online learning and to analyze student involvement in using Zoom compared to face-to-face learning. The purpose of this study is to answer three questions. What is the effectiveness of using Zoom meetings in online learning? And how is student involvement during online learning using Zoom meetings?

This research is expected to provide information regarding the conditions of teachers and students during Zoom Meetings learning. The subjects of this study were elementary school students with adequate technology and internet access. The results of this study are expected to be used as evaluation material for teachers and policymakers in optimizing online learning at the elementary school level. Herein, the difference between this research and previous research is that previous research only examines students' perceptions of online learning using Zoom Meetings, while this research discusses various aspects that affect the effectiveness of online learning while using Zoom Meetings.

Method

This study aimed to describe the application of Zoom meetings to online learning in elementary schools, identify ways to improve the quality of online learning, and develop the use of Zoom meetings to increase the effectiveness

of online learning in elementary schools and examine its impact on the quality of student learning outcomes. This research is based on interviews and questionnaires. Interviews are conducted with the homeroom 6th (grade 6 teacher) in elementary school. While the questionnaire is spread through Google Form. The deployment of the questionnaire was attended by 160 elementary school students (11–13 years) in Indonesia. These students are in the 6th grade at elementary school.

The elementary school usually uses the Zoom platform for online learning. As for students participating in online learning using a computer or cellphone with an installed zoom program. Before starting learning, the teacher sends a link, meeting ID, and password access via WhatsApp to the class group. The uniqueness of this study is the implementation of task collection through the Zoom platform, where students are free to provide a symbol of reactions before and after learning and can ask questions that have not been understood in the Chatbox column. Online lessons begin after the teacher gives permission to join. This online learning session is supervised by student parents.

The study is supported by many previous research stating that Zoom is effective. Bawanti & Arifani (2021) support the results stating that Zoom is effective for online learning in Thailand. Similarly, in their study, Suardi (2020) reported that Indonesian teachers are comfortable in online teaching through Zoom. Dharma et al. (2017) found that the use application such as Zoom can be beneficial for some areas which has limited mobility access and has limited number of Japanese teachers.

At the end of learning, students are given a closed questionnaire. Giving a questionnaire through Google Form containing 18 stars with the choice of answers strongly agree, agree, can not say, disagree, and strongly disagree. Students are asked to answer statements according to the condition of the student. In addition, this study used the interview method. Interviews containing 10 open questions to the teacher. Teachers are asked to answer questions about the implementation of online learning, obstacles, and advantages of using zoom meetings. The results of the questionnaire and interview are recorded and transcribed in Word. The calculation of statistical data is done with the help of Excel. The data were analyzed using descriptive quantitative by calculating the percentage. Percentage is one of the interesting option to describe quantitative research.

Results and Discussion

The teacher's responses to the interview questions were as follows: Learning online during a pandemic is extremely tough. Learning will be ineffective when a pandemic occurs, not because of the limits of learning equipment such as cellphones and laptops, but because of pressure and study habits. In the era of the epidemic, parents occasionally provided cellphones or computers to their children. Learning activities in schools are completely student-centered in the pandemic era; teachers merely direct and instruct online learning activities in class, and students can complete assignments using the Internet or book references.

Because the information submitted or questions given by the teacher to students is sometimes not clearly heard by students, and sometimes students do not understand what the teacher is saying, the interaction between teachers

and students, or students and students, in online learning is not optimal. -decreased, and the student's response to the stimulus provided by the teacher is reduced. Learning materials, learning media, and online learning approaches have all differed. However, due to the restricted amount of time available, online learning is not the best option.

The use of learning resources in online learning was not optimum at first. However, once a new curriculum is in place, the teacher can maximize learning. Students will be more flexible in finding information about school assignments if they are in a conducive setting. A comfortable atmosphere around the house will have an impact on the ease of finding information, and students will be more flexible in finding information about school assignments. Because the teacher has a cellphone, laptop, and signals that enable online learning, the facilities and infrastructure deployed have been effective in facilitating the online learning process in the era of the COVID-19 epidemic.

Many challenges were encountered, including student readiness to learn, limited additional class time, the need for extra time outside of school hours, and limited student cell phones. The environmental conditions in which a student lives have a strong influence on his or her willingness to learn. Not all parents can assist their children in learning online, and a less conducive learning environment causes students to be less focused on learning. Online learning with Zoom Meetings is a platform that can be used as an alternative to online learning. Teachers frequently employ simpler and easier-to-use programs in online learning since, based on student experience, not all students know how to use online learning applications. Zoom Meetings is a new application that is known by teachers and students. However, because Zoom Meetings have many advantages in supporting online learning during the COVID-19 pandemic. So, Zoom Meetings can be used as an effective solution for learning in the era of the COVID-19 pandemic.

Based on the interview results with teachers, the solution for learning during the COVID-19 pandemic was to use Zoom meetings. From the advantages of the application, Zoom Meetings was chosen as one of the most effective solutions for online learning. The responses collected from the 5-point Likert-type survey items were grouped into five categories: carrying capacity, learning environment, student interaction, access, and managing applications in Zoom. In addition, students' responses to the questions about the effectiveness of online learning using Zoom Meetings. The following discussion includes "strongly agree," "agree," "can not say," "disagree," and "strongly disagree" survey responses. The children's responses to the survey question were as followed (Tables 2, 3, 4, 5, and 6).

Table 1. Composition of Various Domains and Statements

Domains	Statements Included
Carrying Capacity	4, 7, 13, 14, 15
Learning environment	3, 12
Student interaction	9, 11
Access	1, 2, 5, 6, 8, 10
Managing Applications in Zoom	16, 17, 18

Table 2. Carrying Capacity

Statements	Strongly Agree	Agree	Can Not Say	Disagree	Strongly Disagree	Total Number of Responses
Learning resources are easily obtained during online learning	13 8.1%	112 70%	12 7.5%	22 13.75%	1 0.63%	160 100%
I have complete facilities to participate zoom meetings in online learning	15 9.38%	97 60.63%	24 15.00%	24 15.00%	0 0.00%	160 100%
The online learning materials using Zoom Meetings have been delivered well	19 11.88%	103 64.38%	13 8.13%	24 15.00%	1 0.63%	160 100%
The learning methods when using Zoom Meetings are varied	15 9.38%	121 75.63%	14 8.75%	9 5.63%	1 0.63%	160 100%
The teacher's assessment of learning when using the Zoom Meetings is objective	21 13.13%	122 76.25%	9 5.63%	7 4.38%	1 0.63%	160 100%

In the aspect of carrying capacity, the majority of respondents agree that 70% of the total students agree that learning resources are easily obtained during online learning, at the same time 13.75% of them disagree to this, 60.63% of the students reported that they have complete facilities to attend classes online 15% of them disagree to this statement, 64.38% of students agree that learning materials using zoom meetings have been delivered well and 15% disagree to this statement. The majority of respondents agree that 75.63 % that learning methods when using zoom meetings are varied and 5.63 % disagree to this statement, 76.25% of the student reported the teacher's assessment of learning when using the zoom meetings is objective and 4.83% disagree to this statement.

Table 3. Learning Environment

Statements	Strongly Agree	Agree	Can Not Say	Disagree	Strongly Disagree	Total Number of Responses
My parents or family are able to guide me well while studying from home	26 16.25%	98 61.25%	6 3.75%	28 17.50%	2 1.25%	160 100%
My parents motivate me to study actively at home	29 18.13%	99 61.88%	16 10.00%	15 9.38%	1 0.63%	160 100%

In the aspect of learning environment, the majority of respondents agree that 61.25% of the total students agree that their parents or family are able to guide while studying from home, at the same time 17.50% of them disagree to this, 61.88% of the students reported that their parents motivate to study actively at home, 9.38% of them disagree to this statement.

Table 4. Student Interaction

Statements	Strongly Agree	Agree	Can Not Say	Disagree	Strongly Disagree	Total Number of Responses
I can do assignments well during online learning	17	107	18	18	0	160
	10.63%	66.88%	11.25%	11.25%	0%	100%
I easily interact with the teacher during zoom meetings in online learning	19	101	20	19	1	160
	11.88%	63.13%	12.50%	11.88%	0.63%	100%

In the aspect students interaction, the majority of respondents agree that 66.88% of the total students agree that they are can do assignments well during online learning, at the 11.25% of them disagree to this, 63.13% of the students reported that their easily interact with the teacher during zoom meetings in online learning, 11.88% of them disagree to this statement.

Table 5. Access

Statements	Strongly Agree	Agree	Can Not Say	Disagree	Strongly Disagree	Total Number of Responses
I understand the learning material, as long as I use of zoom meetings in online learning	21	116	8	14	1	160
	13.13%	72.50%	5.00%	8.75%	0.63%	100%
I feel in online learning using Zoom meetings is fun	14	99	29	17	1	160
	8.75%	61.88%	18.13%	10.63%	0.63%	100%
I can still concentrate on learning through zoom meetings in online learning	17	100	27	15	1	160
	10.63%	62.50%	16.88%	9.38%	0.63%	100%
I don't have any problems when participating in online learning using zoom meetings	13	94	27	26	0	160
	8.13%	58.75%	16.88%	16.25%	0%	100%
I can use Zoom Meetings in online learning	16	102	25	17	0	160
	10.00%	63.75%	15.63%	10.63%	0%	100%
Submit assignments of online learning is easy to do	15	116	17	9	3	160
	9.38%	72.50%	10.63%	5.63%	1.88%	100%

In the aspect access, the majority of respondents agree that 72.50% of the total students agree that they are understand the learning material, at the 8.75% of them disagree to this statement, 61.88% of the students reported that they are feel in online learning using zoom meetings is fun and 10.63% disagree to this statements, easily interact with the teacher during zoom meetings in online learning, 11.88% of them disagree to this statement, 62.50% the students agree that they are can still concentrate on learning through zoom meetings in online learning and 9.38% disagree to this, 58.75% the students agree that they don't have any problems when participating in online leaning using zoom meetings and 16.25% disagree to this, 63.75% of the students report that they are can use zoom meetings in online learning and 10.63% disagree to this statement, 72.50% of the students that they are can submit assignment of online learning is easy to do, and 5.63% disagree to this statement.

Table 6**.** Managing Applications in Zoom

Statements	Strongly Agree	Agree	Can Not Say	Disagree	Strongly Disagree	Total Number of Responses
I can write in chat box zoom meetings	13	102	33	12	0	160
	8.13%	63.75%	20.63%	7.50%	0%	100%
I can use reaction in zoom meetings	11	90	41	17	1	160
	6.88%	56.25%	25.63%	10.63%	0.63%	100%
I can share screen in the zoom meetings	14	83	33	29	1	160
	8.75%	51.88%	20.63%	18.3%	0.63%	100%

In the aspect zoom meeting feature, the majority of respondents agree that 63.75% of the total students agree that they are can write in chat box zoom meetings, at the 7.50% of them disagree to this, 56.25% of the students reported that they are can use reaction in zoom meetings, 10.63% of them disagree to this statement, 51.88% of the total students agree that they are can share screen in the zoom meetings and disagree to this statements 18.13%.

Conclusion

At the beginning of the 2021 semester, the COVID-19 pandemic affected the teaching and learning in many schools in Indonesia. To address this crisis, many schools have turned towards online learning. Some replaced their conventional learning with Zoom. The move was not easy, neither for teachers nor for students who were not prepared for this shift. Technological advances have a major impact on the development of education. Educators use them to facilitate the teaching and learning process and improve the quality of education.

The purpose of this study aimed to describe the application of Zoom meetings on online learning in elementary schools, identify ways to improve the quality of online learning, and develop the use of Zoom meetings to increase the effectiveness of online learning in elementary schools and evaluate its impact on the quality of student learning outcomes. The findings of this study indicated that students were quite satisfied with online learning using Zoom Meetings. Many factors may have contributed to the results of this study. Based on the results of the analysis, it can be concluded that the average number of students who responded positively to online learning using Zoom

Meetings at selected schools in Indonesia is effective. Based on the results of data analysis obtained from filling out student questionnaires, it can be concluded that the online learning system using Zoom meetings during the COVID-19 pandemic is effective based on carrying capacity, learning environment, student interaction, access, and managing applications in Zoom, but inefficient because the quota runs out quickly.

The following are students' views on the effectiveness of learning through the zoom meeting application including Students feel more relaxed and happy, students feel they have more time at home with their families, students feel they have more time to rest and relax, students feel more relaxed and less tense, students feel they can understand the material presented by the teacher, students feel that learning to be brave is more fun because they feel more relaxed and efficient, students hope that the application of courage can be improved, such as student recommendations, namely explanations through videos and technological advances and students' complaints are as follows students feel wasteful because the quota runs out quickly, students feel sad because the pocket money they get is reduced, students feel that social activities with their friends are hampered.

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