Teacher's Perspective on the Effectiveness of Online Learning during the COVID-19 Pandemic

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***Abstract*—Online learning research has garnered widespread interest during the COVID-19 pandemic. However, the perspective of elementary and secondary school teachers on online learning is largely unknown. As such, this study sought to ascertain the perspectives of 276 elementary and secondary school teachers on online learning during the COVID-19 pandemic in Indonesia. This study adopted a survey method using an online questionnaire to collect data, which was distributed via Google Forms. A descriptive analysis was performed on the collected data. The findings indicate that teachers in elementary and secondary schools in Indonesia believe their online learning is ineffective during the COVID-19 pandemic. One reason they rated their online learning ineffective during the COVID-19 pandemic is that their inability to adapt to a new culture of online instruction, which could be interpreted as a result of their classes not being prepared online. Therefore, the findings imply that an appropriate online instructional design for online learning must be prepared more comprehensively. Finally, the limitations and suggestions for future research are also discussed.**

***Index Terms*—Teachers' perspective, online learning, learning activities, COVID-19.**

I. Introduction

It is publicly known that Coronavirus infection was first reported in December 2019 (COVID-19) and was caused by the SARS-CoV-2 virus. A worldwide pandemic of respiratory infections and deaths resulted from this disease. The majority of people have mild to moderate respiratory problems, but others may require medical help. Fever, cough, and a loss of smell and taste are all common COVID-19 symptoms. The coronavirus outbreak has spread to every country on the planet, with the average incubation time being five to six days and the longest being 14 days. The COVID-19 is a virus that spreads rapidly via droplets produced by coughing, sneezing, speaking, singing, or breathing [1]. Minimizing contact between infected people and those who are susceptible to infection is one way to control infectious diseases [2].

The COVID-19 was declared a public health emergency by the World Health Organization (WHO) on January 30, 2020, after it afflicted the entire world. The virus was initially confirmed in Indonesia in March 2020, prompting the closure of some companies, the suspension of public gatherings, the closure of country borders, and the implementation of stringent lockdown measures. This has had a huge impact on schooling. To combat the spread of COVID-19, the Indonesian government adopted a decree dated on March 18, 2020, postponing indoor and outdoor activities in all sectors, including education. In addition, the Ministry of Education and Culture of the Republic of Indonesia also released a Circular No. 4 of 2020 about the implementation of education policies in the event of the COVID-19 proliferation emergency, outlining how to do online learning activities at home.

During the COVID-19 pandemic, many online learning studies in educational settings have been documented in the literature [3]-[9]. However, teachers' perceptions of online learning in Indonesia, to our knowledge, have been infrequently reported, particularly from the perspective of teachers in Indonesian elementary and secondary schools. Therefore, the purpose of this study was to shed some light on the situation of online learning during the pandemic from the perspective of elementary and secondary school teachers in Indonesia.

II. Literature Review

A. Online Learning

According to government regulations, schools must implement online learning to prevent physical interaction between students in order to halt the spread of the COVID-19. Therefore, educational institutions and teachers have to make a transition from face-to-face instruction to online learning as swiftly as possible. Thus, it is now widely acceptable that online education is available at all levels of schooling, beginning with elementary school. It was intended to maintain physical or social separation among school members, with the goal of reducing physical contact that could spread the disease [10]. In other words, the unexpected and compulsive shift away from face-to-face instruction to online learning must inevitably be addressed by educational institutions and teachers [11].

The abrupt and rapid shift from face-to-face to online education creates both a dilemma and an opportunity for educational research. The existing literature highlights "emergency distance learning" [12] with its challenges, such

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as the absence of an online instructional framework, the necessity for experienced instructors, data gaps, and complex home situations [13]. In addition, instructors' capacity to use advanced learning designs [14] and the need for guidance and assistance [15] are becoming concerns. Therefore, the time has now come to investigate the perceptions of teachers towards online learning in order to incorporate it into the future learning process.

Online learning demonstrates difficulties teachers face as a result of the COVID-19 pandemic in terms of developing new skills and adapting to new situations, Teachers, students, and all stakeholders are constantly battling to create and prepare innovative online learning strategies and environments [16], [17]. Teachers must develop a greater appreciation for the value, possibilities, and applications of online learning [18]. Therefore, it is critical to understand how to study online in an emergency online environment and to generate high-quality learning through thorough instructional design and planning [18]. Examining how the current COVID-19 constraints limit many instructor programmes and urging them to adapt to online groups can lead to a greater understanding of student and teacher needs and the adoption of more effective practises. Nonetheless, it is critical to ensure that both teachers and students find these methods appealing. It is critical to provide evidence-based techniques to determine what is compelling and ineffective in this time of change.

It is widely stated in the literature that online learning involves the use of the Internet in learning activities [19]. Students gain flexibility in their learning schedule through online learning. They can study at their own pace and from any location. Virtual classrooms, video conferences, phone calls, and live chat apps like Zoom or WhatsApp can all be used by students to communicate with their teachers. This is a method of learning that was developed to address the limitations of various learning tools. In addition, student attributes, such as access to gadgets, the internet, and internet data packages contribute to the success of a particular learning experience [20].

Nakayama *et al*. [20] state that e-learning research demonstrates that not all students can succeed in online learning due to the characteristics of the learning environment and the students' ability. As a result, during the COVID-19 pandemic, teachers will need to be able to incorporate online learning using a variety of learning modalities. According to recent findings, students struggle to understand subjects and resources [21]. Thus, as part of online classes, teachers assist their students in comprehending their topic delivery through the use of Google Classroom, Edmodo, and Schoology [22], as well as information apps like WhatsApp and social media sites like Facebook and Instagram [23].

B. Online Learning Obstacles

In the COVID-19 era, online learning is prevalent in every educational system on the planet [24]-[27]. This quick shift to online learning has resulted in both positive and negative learning outcomes. Several research findings imply that online learning has been successfully implemented [28]-[30], while others claim that the implementation of online learning is still poor and contributes to new problems [31]-[34]. These issues arose from students' inability to participate in online learning due to a lack of access to online tools or media, a lack of ability to acquire internet data packages, and internet networks that are not evenly spread throughout the country, particularly in rural areas [35]-[37]. The COVID-19 pandemic, on the other hand, has compelled educators to quickly adjust to online learning [21], [38]-[41].

Therefore, the purpose of this study was to investigate teachers' perceptions of online learning during the COVID-19 pandemic with the following research question: (1) What are the perspectives of elementary and secondary school teachers on online learning during the COVID-19 pandemic?

III. Methods

This study adopted a survey method to describe elementary and secondary teachers' perspectives on online learning during the COVID-19 pandemic in Indonesia.

A. Participants

The participants in this study were 276 elementary and secondary school teachers in Indonesia who carried out online learning and filled out a questionnaire. They were spread across three regions of Indonesia and came from 30 provinces, representing the western, central, and eastern parts of the country (Table I).

TABLE I: Distribution of Participants Representing the Western, Central, and Eastern Parts of Indonesia

No	Province	Sex		Frequency
		Male	Female	
1	Aceh	2	5	7
2	Bali	1	2	3
3	Banten	1	4	5
4	Bengkulu	1	2	3
5	DKI Jakarta	3	5	8
6	Gorontalo	3	3	6
7	Jambi	1	3	4
8	Jawa Barat	2	4	6
9	Jawa Tengah	5	10	15
10	Jawa Timur	10	16	26
11	Kalimantan Barat	1	2	3
12	Kalimantan Selatan	1	4	5
13	Kalimantan Tengah	2	1	3
14	Kalimantan Timur	2	2	4
15	Kepulauan Riau	1	4	5
16	Lampung	27	55	82
17	Maluku	3	5	8
18	NTB	3	4	7
19	Nusa Tenggara	2	2	4
20	Papua	1	8	9
21	Papua Barat	0	2	2
22	Riau	1	6	7
23	Sulawesi Selatan	6	9	15
24	Sulawesi Tengah	3	4	7
25	Sulawesi Tenggara	1	2	3
26	Sulawesi Utara	1	3	4
27	Sumatera Barat	2	2	4
28	Sumatera Selatan	2	6	8
29	Sumatera Utara	3	6	9
30	Yogyakarta	1	3	4
	Total			276

Due to the time constraints associated with completing the questionnaire and our residence, which was in Lampung Province on Sumatra island (western part of Indonesia), the number of participants from Lampung Province was significantly higher than that of from other provinces. The total number of respondents might, however, be applied to the entire country of Indonesia.

B. Data Collection

The data collection instrument was an online questionnaire distributed via Google Forms, a free online survey application. The link to the online survey was sent to participants via WhatsApp. The online survey lasted 15 days, following which the data were downloaded to a spreadsheet. In addition, our colleagues spread throughout Indonesia also aided in the distribution of the online questionnaire, resulting in a higher response rate.

Using an online questionnaire with no sensitive questions, this study was considered low-risk. The anonymity was maintained throughout the process of data collection. We did not require written consent from participants since their voluntary participation in the online questionnaire was interpreted as their agreement to participate in the study. In other words, responding to the online questionnaire and sending back to us implied that participants had given us their informed consent to use their responses for the study's purpose.

C. Data Analysis

The data collected via the online questionnaire were analysed quantitatively using SPSS 20 for Windows using a descriptive statistics method. To draw conclusions and make recommendations, the findings were discussed and compared to previous research findings.

IV. Findings and Discussions

A. Implementation of Online Learning during the COVID-19 Pandemic in Indonesia

Indonesian schools initially focused on offline learning, but due to the COVID-19 pandemic, learning activities were moved online to prevent the virus from spreading. With the COVID-19 pandemic striking Indonesia almost immediately, it was critical to transition to online learning. As stated in the literature, teachers had no choice but to implement online learning using the internet. As a result, there are numerous flaws in the learning system's implementation. For example, teachers are required to be connected to the internet network every time they teach, as well as possess advanced gadgets such as smartphones or personal computers. However, a new learning system based on internet technology allows users to engage via the web, even if teachers and learners are located in different locations or physically separated [42]. Despite the benefits of implementing the new learning method, in some areas where internet networks are not available, learning continues to take place in person or through teachers visiting students' homes [43].

The utilization of online learning in areas without access to the internet may help to decrease the spread of the COVID-19. Furthermore, students may feel bored as a result of the length of some online learning exercises. This is in line with [44], who stated that students should be able to quickly adjust to online learning because they have problems maintaining concentration, and that online learning should take less than an hour. [45] show that, when compared to face-to-face instruction, students pay less attention to online learning.

B. Applications for Online Learning

Based on the data collected from the online questionnaire distributed to research participants, the following applications and media were used for online learning (Table II).

TABLE II: Applications and Media Used for Online Learning during the COVID-19 Pandemic in Indonesia

No	learning Media	Elementary School	Junior High School	Senior High School
1.	WhatsApp	82	61	53
2.	Google Classroom	9	14	24
3.	Short Messages/ Phone Calls	3	1	0
4.	YouTube	4	0	1
8.	Students' Home Visits	3	1	0
9.	Other Media	5	4	11
	Total	**106**	**81**	**89**

Table II shows that elementary and secondary school teachers in Indonesia primarily used WhatsApp as a teaching medium during the COVID-19 outbreak. Google Classrooms, on the other hand, has been used by 47 teachers as an online learning tool. Four teachers employed text messages, phone calls, YouTube, and personal visits to students' homes. Twenty teachers stated that they used other media than the ones listed above. According to [35]-[37], this is due to a variety of factors, including limited ownership of smartphones, desktops, or computers, limited internet networks, and limited internet data packages.

C. Online Learning and Teachers' Perspective

To limit the spread of the COVID-19 virus, online learning was implemented in all Indonesian regions, obviating the need for face-to-face instruction, and online learning was implemented through virtual applications and services involving the Internet. Fig. 1 below illustrates the elementary and secondary school teachers' perspective on online learning effectiveness during the COVID-19 pandemic in Indonesia.

Fig. 1 depicts Indonesian elementary and secondary school teachers' perceptions on the effectiveness of online learning during the COVID-19 pandemic, with 80.43 percent believing the online learning effect was negative and 19.57 percent believing the online learning effect was positive. Despite the fact that many teachers believe that online learning during COVID-19 in Indonesia is successful, a few teachers claim that it is not compelling. As a result, it can be argued that Indonesian online learning is ineffective in the face of the COVID-19 pandemic. This is in accordance with research findings in other countries, which concluded that online learning was unsuccessful during the pandemic [37], [46]-[49].

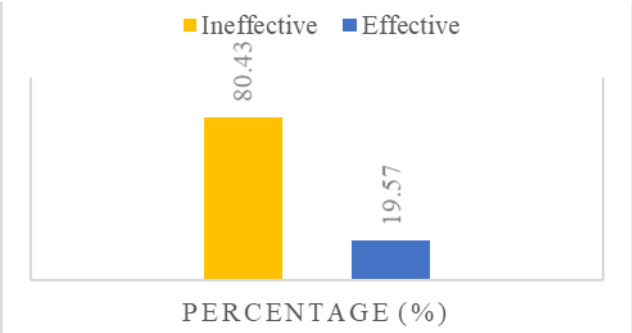

Fig. 1. Elementary and secondary school teachers' perspective on online learning effectiveness.

Moreover, findings in the literature report that if a teacher's role in the learning activity is to act as a learning facilitator or to make it easier for learners to learn rather than to simply supply of knowledge, information and communication technology-based learning will proceed smoothly [50]. In other words, a learner is not merely a passive recipient of information from the teacher. Learners are still expected to be more engaged, creative, and active in the learning process. During the learning activity, learners are not only recalling facts or re-revealing information received from the teacher, but they are also producing or discovering new information or knowledge, through both independent and cooperative group learning with other students [51].

There is a possibility for why participants rated online learning during the COVID-19 pandemic as ineffective and that is teachers' inability to adapt to the new culture of online instruction. This is consistent with findings in the literature that teachers must be able to employ appropriate instructional strategies to accomplish learning objectives in online teaching and learning activities [52]. When materials are appropriate, teacher's willingness to teach, students' condition, and students' inventiveness are all considered, teachers are deemed to be employing appropriate learning methods [53]. The method's efficiency can be determined by the method's compatibility with all of the teaching components that have been designed and prepared [54]. In so doing, students can access content from anywhere and at any time through online learning, making it more convenient for them [55]. Therefore, teachers' constraints in terms of material design, time allocation, and communication in presenting precise instructions all present challenges while teaching online [56].

However, the teachers' inability to adapt to the new culture of online education could also be interpreted as a result of the fact that they do not prepare their classes online. Thus, online learning does not effectively address cognitive, emotional, and psychomotor learning objectives. One of the most important issues is that learning activities are not designed to be completed online [57], [58]. Therefore, detailed planning of online learning activities, including learning design, learning tools, learning media, learning implementation, and evaluation is highly required [59].

V. Conclusion

Based on the findings and discussion above, it can be stated that teachers in elementary and secondary schools in Indonesia perceive their online learning to be ineffective during COVID-19 pandemic. WhatsApp dominates the application for online learning, with Google Classroom, short messages and phone calls, YouTube, and other media following closely behind. Due to limited internet access and a scarcity of student-owned smartphones or laptops, teachers had to visit students' homes to conduct teaching and learning activities. As a result, it is unsurprising that the majority of the participants agreed that online learning is unsuccessful in Indonesian elementary and secondary schools. Therefore, an appropriate online instructional design must be prepared more comprehensively for the online learning activities [60], [61]. This study, however, has limitations. While this study is able to shed light on elementary and secondary school teachers' perceptions of the effectiveness of online learning, the sample size was small. As a result, we believe that additional research with a larger sample size and more sophisticated data analysis is necessary to determine whether our findings are still valid two years after the COVID-19 pandemic began.

Conflict of Interest

The authors declare that there is no conflict of interest.

Author Contributions

Albet Maydiantoro drafted and finalized the writing. Een Yayah Haenilah and Hasan Hariri validated the method, carried out the computations, and came up with the numbers. Rangga Firdaus and Widya Hestiningtyas verified and supervised this work's results and discussion. Bambang Riadi and Gede Eka Putrawan revised the manuscript; they also provided administrative and technical support. The findings were discussed among the authors, who all contributed to the final manuscript and approved the final version.

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