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# Analysis of the Elementary School Teachers' Ability to Use Technology on the Online Learning

## An Exploratory Study of Elementary School in Sidoarjo, Indonesia

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### ABSTRACT

A technology was very familiar in the 21st-century generation. In Indonesia, the implementation of online learning does not always run smoothly, there are various obstacles that occur, such as inadequate gadgets owned by teachers or students, internet networks that are still weak, etc. In this research, we aim to describe (1) how elementary school's teacher conduct online learning during COVID-19 pandemic; (2) the ability of elementary school's teacher in using technology during online learning; and (3) what kind of content used by teacher to present online learning. The findings on this research are the majority of teachers in schools still use WhatsApp and google meet or zoom media in conducting online learning, elementary school teachers still have not mastered learning technology well, and Most teachers are limited to using video downloaded from YouTube, PPT and conventional books to present learning materials.

**Keywords:** Online learning, Technology, Elementary school teacher.

### 1. INTRODUCTION

A technology was very familiar in the 21st-century generation. Everyone are exposed with interesting and impressive technology [1]. Digital technology has been widely used in every field of professional lives, including in education. A significant amount of research demonstrates that educational technology can useful support the engagement of online learners [2], [3]. A survey of 2,462 Advanced Placement (AP) and National Writing Project (NWP) teachers finds that digital technologies have helped them in teaching their middle school and high school students in many ways [4]. Since 2018, Indonesian government proposed teacher and educational sector to use technology in learning process. But it have not been achieved well due to the lack of support from the academic community and facilities in the school environment [5].

However, in 2020, COVID-19 pandemic has plagued Indonesia, so that the Indonesian government through the Regulation of the Minister of Health Number 9 of 2020 trying to minimize the spread of the virus by issuing a ban to crowd and enforce PSBB almost in every region in Indonesia. Minister of Education and culture in 2020 through regulation Number 36962/MPK.A/HK/2020, also instructed that the teaching and learning process is

carried out online to prevent the spread of COVID-19. Normally, learning process held by face-to-face meeting in the class, then in the pandemic era, learning process is carried out by relying on technology, especially internet, to hold meeting between teachers and students [3], [6]–[8].

In Indonesia, the implementation of online learning does not always run smoothly, there are various obstacles that occur, such as inadequate gadgets owned by teachers or students, internet networks that are still weak, etc. [9]. Fadilla, Relawati, and Ratnaningsih (2021) stated that there are problem occurs during online learning, i.e students find difficulty to understand the learning material delivered by the teacher, students do not feel motivated to learn, students do not master learning well [7]. Based on investigation conducted by Sumaningrum and Wijayanto (2020), online learning often constrained by internet networks that are difficult to reach, so the online learning activities are not smooth [10]. In another research, Hutagaol and Nasari (2021) obtained that some students are not active in participating in learning, internet quota is expensive, students lie to parents [8].

On the previous reserch conducted by Asmuni (2020), the problem of the online learning was the teacher



## 2.5. Data Analysis

The data obtained will be processed and analyzed descriptive quantitative approach. Data analysis technique is the activity of grouping data based on variables and types of respondents, describe the data, test the requirements of the analyst. The data that has been analyzed will be presented in the diagram. The final step in the data analysis stage is drawing conclusions and verification based on data that has been obtained from various sources.

To describe the data for each variable, we used the following formula to determine the percentage of the ability of elementary school's teacher in using technology:

$$p = \frac{n}{N} \times 100\%$$

Then, we describe the characteristics of the result using these criteria, show on the Table 1:

**Table 1.** Percentage Criteria Range

No	Persentase	Kriteria
1	0 – 20	Very poor
2	21 – 40	Poor
3	41 - 60	Neither good nor poor
4	61 – 80	Good
5	81 - 100	Very good

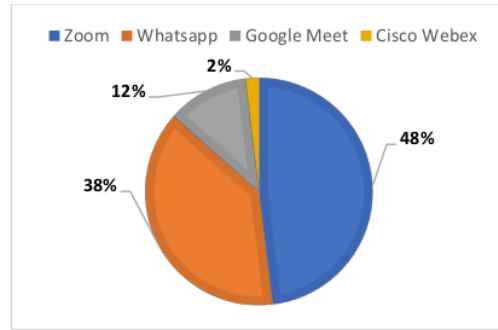
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## 3. RESULTS AND DISCUSSION

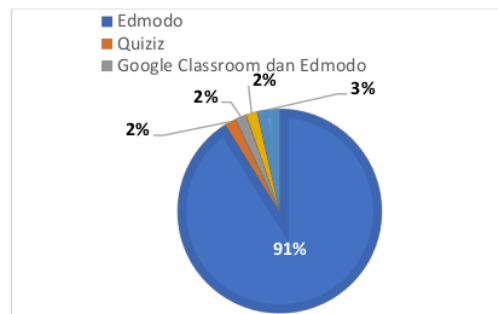
The data obtained from the research were from 3 elementary school in Sidoarjo. There are 5 to prove the hypothesis that has been defined before.

### 3.1. How Teachers Conduct Their Online Learning

The teacher who fulfilled the questionnaire was conduct online learning during COVID-19 pandemic. They used various application or platform to deliver their learning content. The data about the platform used by teacher can be seen from Figure 2 and Figure 3.



**Figure 2.** Synchronous Platform Used by Teacher During Online Learning

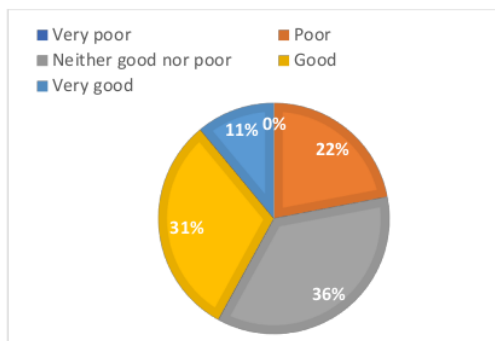


**Figure 3.** Learning Management System (LMS) Used by Teacher During Online Learning

From the data on Figure 2, most of the teacher used Zoom Meeting to teach, following by WhatsApp. Another video conference that familiar to use by the teacher is Google Meet. By using video conference, the teacher can deliver the material directly to the students verbally. Sometimes it used to deliver the important or basic concept of the learning material. The platforms are easier to use and reach by both the teachers and students. Besides that, the teacher also use Learning Management System (LMS) such as Google Classroom, Edmodo, etc to teach online. From the Figure 3, Edmodo is the most application used by teacher.

### 3.2. The Ability of Elementary School's Teacher in Using Technology During Online Learning

The teacher's ability in using technology is the main factor to held online learning. the data can be known from the Figure 4.

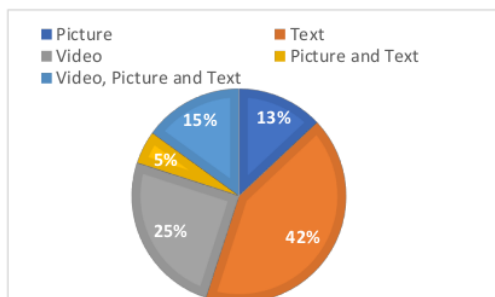


**Figure 4.** Percentage about The Ability of Elementary School's Teacher in Using Technology During Online Learning

Based on the Figure 4, the ability of the teacher in using technology is mostly in the middle category. Only 11% teacher in the very good criteria, but no one teachers on the very poor category.

### 3.3. Kind of Content Used by Teacher to Present Online Learning

The teacher can present their learning material in many kinds of content. The data present on the Figure 4.



**Figure 5.** Content Used by Teacher to Present Online Learning

Mostly, teacher used text to present their learning material. They convenience to provide content in text by using e-book or conventional book owned by students, such as BSE (Buku Sekolah Elektronik). It followed by video. They are easy to serve by downloading from YouTube or the teacher just send the link of the video to the students by WhatsApp.

### 3.4. Discussion

There are three indicators to analyzing the teacher's ability in using technology. The indicators are (1) How Teachers Conduct Their Online Learning; (2) The Ability of Elementary School's Teacher in Using Technology During Online Learning; (3) Kind of Content Used by Teacher to Present Online Learning. Based on the result of the research, it can be discussed as follows.

Firstly, Teachers mostly conduct the online learning synchronously by using video conference, Zoom Meeting followed by google meet. Both of the platform is easy to use by either teachers or students. Its relative ease of use, cost-effectiveness, data management features, and security options [19], [20]. Otherwise, very limited teachers used Cisco WebEx to conduct the online learning. It is caused by the application is familiar to teachers and students, not compatible for every gadget. Septantiningtyas, et.al. took research that aims to find the effect of the Google Meet application. The result of the research obtained that learning by using Google Meet has a positive impact on the students interest because it so convenience to use, flexible, and can be implemented everywhere [21]. Nasution (2021) stated that the online learning tend to get positive result by using google meet and quizziz [13], [22]. Many teachers also held online learning asynchronously using WhatsApp and LMS such as Google Classroom and Edmodo. Most of the teacher used WhatsApp to support their online learning. WhatsApp is the most familiar application used in daily live by students, teacher, and parents. The results of this study are coherence with the results of research conducted by Amin and Sundari (2020) that WhatsApp mobile messenger application receives more positive agreement and preferences [23].

Secondly, the ability of teachers to use technology is in the middle range. 36 % teachers are in the "Neither good nor poor" category. It means that majority of the teacher is limited to use video conference and LMS. They cannot develop teaching materials by utilizing technology, such as e-book and interactive multimedia. Ningsih (2021) find that the teacher were lack of preparation in providing learning material based on technology [24][25][16].

Thirdly, 42% teachers use text for content learning. They used e-book or conventional book owned by students. They are not mastered well to provide the content of learning based on ICT. Besides that, videos downloaded from YouTube are the main choice for teachers to use in delivering learning materials because they are easily accessible and have many choices. Agusriadi (2021) was found that the implementation of Zoom Meeting integrated with YouTube was successful with a high level of attendance of the participants, a level of likeness that was evenly distributed in all material presented by the resource persons, and a very high level of satisfaction with the guidance committee services [26].



By using YouTube, learning becomes more interesting and increases the positive stimulation of students to learn English [27]. The third content used is integrated text, picture, and video. It presented by Slide on Power Point.

#### 4. CONCLUSION

Based on the data analysis and discussions, we find that:

The majority of teachers in schools still use WhatsApp and google meet or zoom media in conducting online learning. It showed by Synchronous platform mostly used by teacher during online learning is Zoom. Then LMS mostly used by teacher during online learning is Edmodo.

Elementary school teachers still have not mastered learning technology well. That known from the data of The Ability of Elementary School's Teacher in Using Technology During Online Learning showed 36% teachers are in the "Neither good nor poor" category.

Most teachers are limited to using video downloaded from YouTube, PPT and conventional books to present learning materials. The data from instrument of content used by Teacher to Present Online Learning showed 42% teacher used text content. 25% teacher use video from YouTube. Then 15% teachers use text, video, and picture served by PPT.

Based on conclusion research has been some suggestion is teacher can develop and improve the learning material from text conventional to be interactive e-book during online learning.

#### AUTHORS' CONTRIBUTIONS

The contribution of the first author was the designer of the research, compiling and analyzing the data. The second author was a questionnaire developer, collecting and analyzing data. The third author was the data collector, analyst and presentation designer.

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