

# The Effectiveness of Learning Media for Elementary School During Covid-19 Pandemic Era: A Literature Review

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**Abstract.** The government issued a policy to limit public activities, particularly at the level of education. The reduced interaction between teachers and students makes online-based learning systems considered not as effective as face-to-face. Preferred Reporting Items For Systematic Reviews and Meta Analyses (PRISMA) was employed as a base for this literary review. study. A total of 46 articles were obtained in this systematic study to determine the effectiveness of learning media for the elementary school level during the covid-19 pandemic. From a number of research articles found, it has identified that WhatsApp social media is frequently employed in online learning followed by google classroom and zoom, android based Augmented reality and zoom. Regardless many applications and online learning media, it should be noted that they cannot be used simultaneously. And until now, the application of online learning remains ineffective and unable to replace conventional learning methods.

**Keywords:** effectiveness, online learning, elementary school, covid-19

## 1 Introduction

Coronavirus 2019 or known as COVID-19 is a recognized new strain of virus causing respiratory infection initially appeared in Wuhan, China, in December 2019. The coronavirus was first known to be transmitted from bats. Furthermore, it is known that the virus is transmitted from animals to humans and then from humans to other humans, but this rarely happens, most of the transmission of the virus occurs from individual to individual through respiratory droplets, coughing, breathing air, and talking [1].

From the latest data published by the author from the WHO website, as of June 12, 2020, Covid-19 has spread to 6 continents with an incidence of 174,502,686 cases with 3,770,361 deaths reported to WHO. In Indonesia alone, Covid-19 cases have reached 1,885,942 cases with 52,373 deaths. The spread and death rate due to Covid-19 which continues to grow proves that the actual incidence and death rate after Covid-19 still has the potential to continue to grow and therefore restrictions on community activities or activities must still be applied for an indefinite period of time and this includes restrictions on world of education which includes all levels of education, including colleges and elementary schools.

The government issued a policy to limit public activities, especially at the level of education through a circular issued by the Minister of Education and Culture Number 3 2020 concerning Covid-19 preventive acts within Educational Sectors and Units and Number 36926/MPK.A/HK/2020 in relation to online learning. This is in line with the recommendations of the government and world health organizations not to conduct face-to-face learning where this follows the recommendations of stay at home and social distancing. On the other hand, the

limited interaction between teachers and students resulted in ineffective online-based learning systems compared to live learning activities.

Students experience negative impacts as face-to-face learning is abolished and replaced by online learning, especially because not all students master online learning and many teachers and lecturers are still not proficient in teaching using internet-based technology or social media, especially in a number of areas which still have limited internet access [2]. In addition, teachers and parents are still constrained in mastering technology which results in the ineffective implementation of teaching and learning using online methods [2]. Provision of learning materials that are less maximum and disruption of the learning process [3]. This is also supported by Astuti which states the level of effectiveness of online learning during the Covid-19 pandemic is 39,6% [4], while Hamdani and Priatna demonstrates the level of effectiveness of online learning during the Covid-19 pandemic of 66.97% [5], and Hambali et al. reveals the effectiveness of online learning during the Covid-19 pandemic by 50% [6].

A number of studies on the use of learning media, particularly at the elementary school level, have been carried out to figure out the advantages, disadvantages and effectiveness of the application of online-based learning systems in the current Covid-19 pandemic. As done by Qurrotaini et al. that used animated video-based learning media, where the results of the research displayed that the use of Powtoon animated video-based media can improve the quality of the teaching and learning process, the material presented becomes clearer and more real and students become easier to understand the material [3].

Furthermore, Lestari employs social media Whatsapp where the results of the research indicated that elementary school students were still less motivated in learning and facing difficulties in understanding the material provided in all the subjects taken [7]. Surandika et al. using social media where in the cognitive domain, the results of the research concluded that the use of YouTube made it easier for students to work on thematic questions with discussions on Indonesian and PPKn subjects [8].

Wiryanto use of Whatsapp, Zoom, Google Classroom and Google Form in the Mathematics learning process [9], where the teacher's explanations were made in the form of videos and sent via Whatsapp. The learning phase was carried out using Zoom, while for the question and answer session using facilities from Google Classroom while assignments were given via Google Form or Whatsapp. The results of his research concluded that the mathematics learning process in fifth grade could not be applied effectively and maximally, due to several obstacles.

Putria et al. study has found that activities of study and learning are conducted by guiding the learners to watch TVRI and filling in the questions provided on the broadcast then the results are reported to the homeroom teacher [10]. The results of the research display that students feel bored and bored while carrying out learning. Online learning conducted for elementary school-aged children is considered less effective. Then, Ani studied the evaluation of online mathematics learning using Whatsapp and TVRI media, the research outcomes conclude that online learning is still ineffective or not optimal [11], mainly because it is still difficult to comprehend the resource and materials provided during the online class activities.

## **2 Method**

Research method employed in this study was literature review based on PRISMA (Preferred Reporting Items For Systematic Reviews and Meta Analyses). A systematic study was carried out to determine the effectiveness of learning media for the elementary school level during the Covid-19 pandemic. The literature search was conducted through reference sources from Science Direct and Google Scholar with the criteria for literature published within the last

two years (2019-2021). Inclusion criteria were determined based on: type of study, type of intervention, outcome measure (outcome).

Table 1. Research Inclusion Criteria	
Inclusion Criteria	
Period	Maximum publishing period of 2 years (2019-2021)
Type of Study	Quasi experiment, descriptive study, and other research method
Language	English
Type of Journal	Original research articles, can be accessed ( <i>open access</i> ) or available in full version ( <i>full text</i> atau <i>free full text</i> )
Journal Content Theme	Measurement result (dependent and independent variable) or outcome Related to learning media Related to primary school students Related to Covid-19

The search strategy was carried out through the Science Direct and Google Scholar databases to search for relevant articles and the database search was carried out in June 2021. The keywords used were "effectiveness" "effectivity" "online learning" "primary school" "covid"

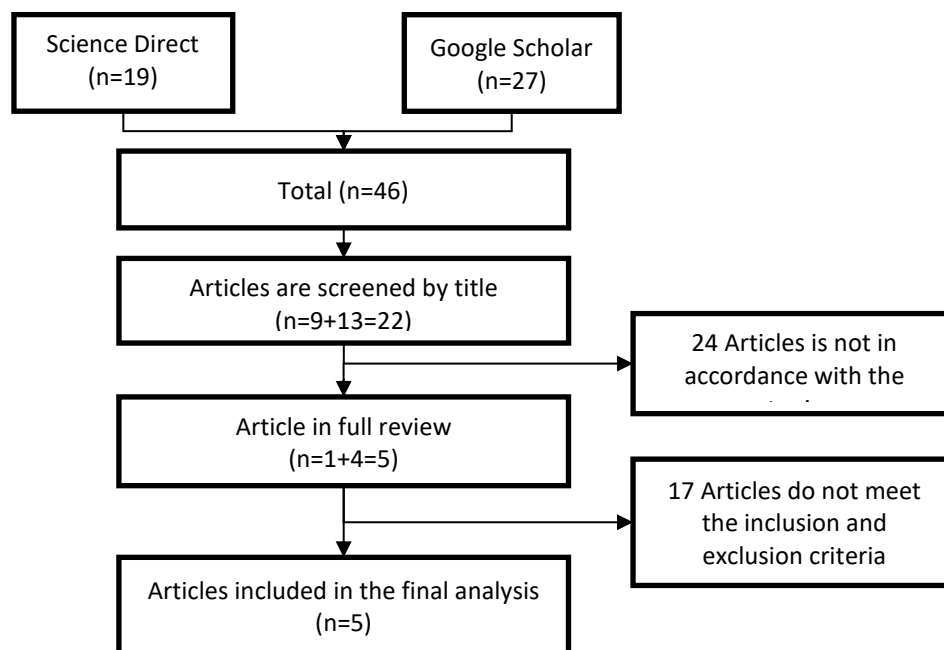


Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) Flowchart

### 3 Discussion

A PRISMA flow chart (flow diagram) is used to display a number of published articles or journals that have been identified and evaluated for their requirements. The first stage is the initial identification of the Science Direct and Google Scholar databases based on pre-defined keywords, a total of 46 articles were obtained. Furthermore, 24 were excluded after screening the title and relevance of the abstract. The next stage is removing duplicate articles, no articles with the same title and author's name are found. The next stage is to issue articles that do not meet the inclusion criteria, in the articles found, there are 17 articles that are excluded because they do not meet the inclusion and exclusion criteria so that the total articles used are 5 articles that are appropriate.

It is known that there are various methods, media and online-based learning applications available, all of which have their respective strengths and weaknesses. In reality, teachers often find it difficult to determine the right or appropriate online-based learning media [12]. Teachers are often wrong in choosing and implementing online learning because they do not adjust their abilities, experience and other things that can affect the effectiveness of learning media, especially for elementary school students.

From a number of research articles found, it is recognized that WhatsApp social media is frequently used in online learning [6], [12], followed by google classroom and zoom [13], android based Augmented reality [14] and zoom [15].

The Whatsapp application is commonly used because it is widely used by many users or already known by many people, easy to use, able to send various kinds of media both text, sound, images, videos, and capable of performing video calls, form groups, video calls in groups, share locations, and so forth.

The advantages of using WhatsApp in primary school English learning are as follow: 1) sending text messages; 2) sending photos from the gallery or the camera; 3) sending video; 4) sending files; 5) voice call, including submitting your voice message that the recipient can listen at any time; 6) sharing location using GPS; 7) sending contact cards; 8) and WhatsApp also supports several emoji, 9) as well as setting up users profile panel, consisting of name, photo, status and some privacy set-tings tools to protect profiles and also a tool to cover messages, changing account numbers and make payments online. Users can interact through written messages or voice that can be carried out without limitation of time and place, and it is highly feasible to communicate in groups through WhatsApp groups [12].

WhatsApp is a little behind other applications. Nonetheless, this application is a very acceptable innovation in remote areas that lack facilities such as computers, etc. Generally participants have positive attitudes towards learning new vocabulary items via WhatsApp. It was found that smaller groups of students obtain more benefit from the usage of Whatsapp during studying and it has a positive impact on students final accomplishment, [12]

On the Other hand, Google Classroom and Zoom were chosen because they are considered more private, more formal and less disruptive, such as using a smartphone, where calls or outside calls can interfere with communication and interaction. While online learning based on augmented reality is chosen because it is able to combine virtual objects interactively, it can be visualized in three dimensions like real objects. Moreover, apart from being chosen because it

more closely reflects the actual class, Zoom is considered more comfortable and hopefully compared to similar applications.

In learning English, teacher uses social media Whatsapp as an online teaching and learning tool where the results of his research explains that some first grade students feel happy in participating in Learning. After all, the teacher uses the teaching patterns that students like the most so far, and again in the online learning process using WhatsApp students feel familiar because they are used to communicating with WhatsApp media. And learning outcomes indicate the maximum results obtained by students during the question and answer interaction or work on the issues. Even the teacher feels autonomous or freedom in determining the preferred teaching patterns according to the needs of children.

Similar subjects are also run by Saraswati et al., but they uses google classroom and zoom media and applies both verbal and tangible rewards where verbal rewards are the most frequently used [13]. This is done so that the learning and teaching process is not boring, increases interaction with students, creates a lively atmosphere and motivates students. This is indicated by the perception of first grade students who say they are happy to get rewards when learning takes place.

Agustika applying augmented reality-based online learning in mathematics learning, especially on geometry material [14]. The results of his research stated that the use of Augmented Reality-based learning media has moderate effectiveness. The use of augmented reality-based learning media can have a positive influence on students' understanding of the concept of Geometry at the level of primary school education, especially in fifth grade students. This results showed that there are significant differences in the students' mathematical competencies before and after using augmented reality based learning media.

Hambali et al. examines the effectiveness of Physical Education learning where the media used is Whatsapp social media [6]. The results of his research demonstrate that Physical Education Learning activities was at a value of 50% effectiveness during the pandemic. In addition, based on the study outcomes that has been carried out, online learning activities for physical education is, as a matter of fact, less effective due to learning activity process that obliges students to be engaged live in the field are impossible to be applied.

Kirsch et al. using Zoom as an online learning medium and Email for giving homework [15]. Their research examined elementary school students in Luxembourg, Germany and Switzerland. Based on the interview outcomes with elementary school pupils, it is acknowledged that pupils referenced the amount of schoolwork which passed on them brief period to do different things. A few minors referenced that they did not comprehend the work given. Numerous understudies conveyed anxiety that they had studied less, were stressed of falling behind or failing the subjects. They expressed that they had failed to remember a language, found it difficult to be focus, required inspiration, unable to study at home and failed to do their assignments. In Luxembourg and Switzerland, 18% of elementary students and even 55% in Germany had barely at any point contact with their teachers. 41% of grade school understudies in Luxembourg revealed having no less than three or multiple times contact with their teachers in a week, a number that diminished to 27% for Switzerland, and to 8% for Germany. Concerning the recurrence of utilization of a tablet or a PC for school assignment in the time of pandemic, the

most continuous response for schooled children was "occasionally "(fourty three percent in Luxembourg, fourty two percent in Germany, and fourty nine percent in Switzerland). The outcomes of the research indicated that electronic gadgets were regularly used to transfer materials and that engaged students were proficient digitally.

It should be noted that each online learning tool has advantages and disadvantages. Although WhatsApp is a type of social media that is often used and accepted by both teachers, students and parents, it is actually a little behind other applications, but this application is a very acceptable innovation in remote areas that lack facilities such as computers, etc [16].

#### **4 Conclusions**

Because of the countless sorts of online-based media applied in the learning process just as the numerous techniques are able to be utilized to assist the viability of the execution of the teaching and learning process, consequently, online-based class activities are able to be managed successfully where primary school pupils are likely able to comprehend, understand the continuous subject materials, and teachers should utilize their educating experience. Determination of online learning media should consider the ability of students and parents to use them, the availability of tools such as smartphones, computers and the internet. In addition, teachers should also consider appropriate and appropriate online learning media because the effectiveness of the selection of media types does not apply to other learning materials. Although it is a bit behind compared to other applications, Whatsapp social media can be chosen for areas with low economic levels where students do not have computers or laptops and need to consider smartphone ownership which may not be owned by students or parents of students who have low income or lack. Then, it should also be noted that one of the problems that often interferes with the use of Whatsapp is the large number of incoming messages and calls that can interfere with the learning process. It should also be underlined by the teacher that based on a number of existing studies, it is known that online learning has been carried out by a number of schools. by elementary school teachers as well as by elementary school teachers are still not effective and cannot replace conventional learning methods. Then, although there are many applications and online learning media, it should be noted that they cannot be used simultaneously. This study has limitations where the journals found do not directly compare their effectiveness. Furthermore, this study does not focus on a particular country which in this study includes a number of countries in the world which have higher application of teaching systems and abilities from both an economic and social perspective, for example in developed countries so that the results cannot be generalized.

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