



## A Case Study of WhatsApp Messenger Application-based Online Learning in Elementary School

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**Abstract.** The pandemic situation gives no other option for all schools to switch from face-to-face learning to online learning immediately. Some schools in Indonesia were looking for the most feasible alternative by considering the availability of supporting resources both owned by the school and parents of students at home. One of the most familiar alternatives is the use of messaging applications. This study aims to describe how the planning and implementation of online learning using messaging applications are implemented in an elementary school in Greater Jakarta, Indonesia. The research used the case study method. Researchers conducted a series of data collection such as interviews, observations, surveys, and document tracking. Based on the data collected, it is known that online learning based on the WhatsApp messenger application is carried out based on a learning plan prepared by the Education Office of Greater Jakarta which can be adjusted to the needs and conditions of the school. The implementation of an online learning design was carried out using the WhatsApp messenger sharing application.

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#### Keywords:

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### INTRODUCTION

Since the Covid 19 outbreak in Indonesia, the government has taken many ways to prevent its spread. One of them is through a policy of study from home from the Ministry of Education and Culture in early March 2020 that enforce all school from early childhood level until higher education level to conduct online and distance learning. The government's recommendation to stay at home and maintain physical/social distancing must be followed by

a change in the face-to-face learning model to online.

The pandemic situation gives no other option for all schools to switch face-to-face learning to online learning immediately. It is such an ad hoc learning planning with no designed instructional planning. Schools should prepare all the necessary resources to run online learning, not to mention the students' and parents' readiness to study from home.

Online learning is a process of learning that uses the internet network with accessibility, connectivity, flexibility, and the ability to bring up various types of learning interactions (Deeson, 2004; Kwong, Mui, & Wong, 2020; Wong, Khalil, Baars, de Koning, & Paas, 2019). Online learning in its implementation requires the support of mobile devices such as smartphones, tablets, and laptops that can be used to access information anywhere and anytime (Keengwe & Kidd, 2010; Moore, Dickson-Deane, & Galyen, 2011; Shang, 2016). The use of mobile technology has a major contribution to the world of education, including the achievement of the objectives of distance learning (Moore et al., 2011). With online learning, students can have the flexibility of time to study, they can learn anytime and anywhere. Students can interact with teachers using several applications such as classroom, video conference, telephone, or live chat (Dewi, 2020).

Online learning, generally, uses an LMS (Learning Management System), which is a software application for teaching and learning activities and online activities (connected to the internet), to support administration, documentation, report generation from a learning process activity, arranging learning materials, and learning interaction. It can be concluded that LMS is an application that automates and virtualizes the teaching and learning process electronically (Campbell, 2004; Keengwe & Kidd, 2010; Twigg, 2003).

During the pandemic, many schools in Indonesia cannot be able to facilitate designed online learning with LMS due to several obstacles and conditions. Some schools in Indonesia were looking for the most feasible alternative by considering the availability of supporting resources both owned by the school and parents of students at home. One of the most familiar alternatives is the use of messaging applications.

This condition also occurred at 17 Public Elementary School at Palmerah in Greater Jakarta, where the research was conducted. 17 Public Elementary School at Palmerah in Greater Jakarta tried to facilitate online learning by optimizing the use of the WhatsApp Messenger application. One of the application's features used for managing online learning is group chat in WhatsApp Messenger. The messenger application is an instant messaging application for smartphones that offers text, media, and document transfer from a user to other users, individually or in a group.

WhatsApp Messenger uses internet data (Allo, 2020; Koomson, 2018; Mtega, 2021).

Messaging applications are not specifically designed to be used as a support for online learning, however, the two-way communication function in the application makes some schools consider it to support online learning. Teachers and students can have learning interaction, such as discussing some topics, giving learning instruction, providing resource information, conducting an assessment, not to mention offering parents control over their children's learning.

The use of messaging applications to support online learning is also widely implemented in China. This is as explained in research by Shang in 2016 that shows the use of the WeChat Messenger Application to support distance learning in Folk Literature. The result of the study shows that (1) in terms of functional support, WeChat Instant Messaging supports for text and voice interaction, auto-reply to response, subscription push, content sharing, and direct feedback. (2) In terms of supporting learning, this platform supports interaction, sharing and searching of resources, etc. Therefore it can be concluded that the application of the WeChat learning platform in folk literature can facilitate the implementation of distance education and have a positive impact on education and teaching (Shang, 2016). Other research conducted by Shi, Luo, & He researched the language instructional with supporting of WeChat instant messaging. The result of this research shows that the mobile-assisted language instructional model has been tested effectively to increase students' interest and improve their English skills (Shi, Luo, & He, 2017).

The pandemic conditions that encourage schools to conduct online and distance learning using messaging applications were interesting to be explored. The efforts to facilitate learning during this pandemic have one goal to ensure the achievement of intended learning outcomes. The use of messenger applications could be one of the most feasible and low-budget alternatives to conduct online learning during a pandemic or another context. It is important to conduct a study on this case to enrich the literature on online learning. Based on the discussion above, this research will focus on questions; 1) how to plan WhatsApp Messenger application-based online learning in 17 Public Elementary School Palmerah in Greater Jakarta? 2) How is the implementation of WhatsApp Messenger application-based online learning? This study will explain the

collected data through a series of teacher interviews, classroom observations, and data tracking in 17 Public Elementary schools at Palmerah in Greater Jakarta.

**METHOD**

The method used in this research is case study research. The case studies were included in descriptive analysis research that focused on the planning and implementation of WhatsApp Messenger application-based online learning in 17 Public Elementary schools at Palmerah in Greater Jakarta. This study describes the conditions of WhatsApp Messenger application-based online learning in 2 stages, the planning, and implementation stages. The planning stage is referred to the activity of designing an instructional plan using the WhatsApp Messenger application which is carried out during the Covid19 pandemic. Meanwhile, the implementation stage is referred to as the online learning activity in the fifth class of 17 Public Elementary Schools at Palmerah in Greater Jakarta.

The data in this study is collected from the teachers and 29 students in the fifth grade in 17 Public Elementary schools at Palmerah in Greater Jakarta, as well as the researchers as observers. The instruments used in this study are interview guidelines, observation checklists, objective tests, and questionnaires. The data was collected through various methods of data collection, including interviews, document tracking, observation, and survey.

The data collected to describe the planning stages is data that explains the instructional design process, including the writing of instructional goals and performance indicators, the selection of learning strategies, the selection of learning resources, and the selection of assessment methods. We conduct an in-depth interview with teachers of the fifth grade and reviewed the curriculum documents to verify the data validity. The data collection related to the planning stage can be seen in table 1.

**Table 1.** Data Collection Related To Planning Stage

<b>Component</b>	<b>Aspect</b>
Instructional Design	Instructional Goal
	Performance Indicator
	Learning Strategy
	Learning Resources
	Assessment

To obtain data that describes the stages of online learning implementation, we collect data related to technology utility, access to learning resources, and interactions that occur during WhatsApp Messenger application-based online learning. Data were obtained through a survey conducted to 29 students in fifth grade in 17 Public Elementary schools, as well as interviews with parents and teachers, and observations to confirm the validity of the data. The data collection related to the implementation stage can be seen in table 2.

**Table 2.** Data Collection Related To Implementation Stage

<b>Component</b>	<b>Aspect</b>
Online Learning	Technology Utility
	Access To Learning Resources
	Interactions

In this study, researchers used triangulation techniques to validate the collected data. The triangulation technique is to test the validity of the data which is done by checking the data to the same source with different techniques. Information from respondents was tested for validity through two or more different data collection techniques. The triangulation technique used in this study compares data collected through observations, in-depth interviews, surveys, and document tracking.

The collected data was then analyzed into three phases (1) organization and recognition, (2) coding and reduction, and (3) interpretation and representation.

- a. Familiarizing and organizing: the first stage in analyzing collected data involves socializing and organizing data to make it easier to organize. We recorded answers from interviews and then organize the answers, after that we then analyzed the data by reading and rereading notes and transcripts, viewing and reviewing the data repeatedly.
- b. Coding and reducing: after getting familiar with the data and organizing the data, the researcher began the process of coding and subtraction. The coding is done by taking the main idea of the qualitative data, while the reduction referred to the selection of the relevant answers and the reduction of irrelevant answers.
- c. Interpreting and representing interpretation involves reflecting on words and actions

and abstracting important insights from the source. Interpretation is a process in which the researcher comprehends the meaningful collected data, then representing the data in a better presentation, provides explanations, and develops plausible explanations into hypotheses that develop during the analysis.

## RESULTS AND DISCUSSION

We will explain the implementation of WhatsApp Messenger application-based online learning in two main stages. The first stage is the planning stage which focuses on how to plan WhatsApp Messenger application-based online learning in 17 Public Elementary schools Palmerah in Greater Jakarta. The second stage is the implementation stage which focuses on how the implementation of WhatsApp Messenger application-based online learning in 17 Public Elementary School Palmerah in Greater Jakarta is.

### *Planning Stage*

Based on these data, it is known that in the online learning planning process, the teacher already knows the general and specific learning objectives to be achieved in this online learning because it has been provided by the education office. This can also be seen in the curriculum document from the Education Office of Greater Jakarta which contains the general and specific learning objectives. The teachers then adjusted the online learning activities that will be implemented in lesson plan documents.

As we can see, the role of the Education Office to set the minimum standard of online learning to support the study from home during pandemic policy becomes crucial. It can trigger schools to easily adjusted their teaching and learning planning regarding the urgency to switch the mode from face-to-face to online and distance learning. This top-to-bottom approach can maintain the minimum standard to ensure the achievement of intended learning objectives. School can adjust their online learning activity based on their resource's capability and students' demography.

The curriculum document from Education Office contains the following data to support online learning in each school:

- Core competency
- Basic competency
- Related theme
- Related content
- Online learning resources and media

- Assessment

Core competency and basic competency mentioned in the online learning curriculum document from the Education Office of Greater Jakarta are the same competencies that are already mapped in the Curriculum 2013 document. Curriculum 2013 is the curriculum from the Ministry of Education that was released in 2013 to be applied in elementary level until senior high school level. The main focus of Curriculum 2013 is on character development that is known as 4 C's learning, including critical thinking, collaboration, creativity, and communication (Hasanah, 2019; Mitra & Purnawarman, 2019; Zahra, 2019).

As for online learning resources and media mentioned in the online learning curriculum document from the Education Office of Greater Jakarta is open and free resources from the Ministry of Education and Culture of Indonesia. The online learning resources and media can be access online to all people with the link. The available learning resources and media encompass a free electronic textbook (Buku Sekolah Elektronik), a related instructional video produced by the Ministry of Education and Culture of Indonesia, schedule of related TV Programs in Indonesian national television, TVRI.

The information of available online learning resources and media in the curriculum document is help school and teachers that have no online resources preparation to support online learning activity, as well as for teacher in 17 Public Elementary School at Palmerah in Greater Jakarta. Based on the online learning curriculum document from the Education Office of Greater Jakarta, teachers in the fifth grade can prepare the daily online learning activity using the WhatsApp Messenger application. Before the pandemic, teaching and learning activity in 17 Public Elementary schools was running fully online with printed textbooks and learning media that were presented in the class. This condition becomes one of the biggest challenges for the school and teachers to preparing the resources online.

To ensure the students can access the available online learning resources and media at home, teachers in the fifth grade downloaded all the electronic textbooks and videos before being shared in a group chat in WhatsApp Messenger. Each teacher already has a group chat with the parents of their class students as the member. Before the pandemic, this group chat dedicates to become a channel for the teacher to give information and announcement

related to teaching and learning activities, as well as school events.

In addition to preparing the available learning resources and media, the teacher also prepared assessment activities to be implemented in WhatsApp Messenger application-based online learning. Teachers list the assignment weekly in the lesson plan. The assignment is often related to the online learning resources and media to trigger students in accessing learning resources and media.

All the preparation in the planning stage was conducted weekly before the session was conducted. School and teachers will have weekly briefing session to ensure the preparation align with the minimum standard that mentioned in the online curriculum document from Education Office of Greater Jakarta. On this level, it can be concluded that the role of government in setting minimum standards is critical. The minimum standard not only can ensure the minimum achievement of students but also help schools and teachers to have a clear description of the online learning model they will apply.

#### ***Implementation Stage***

WhatsApp Messenger application takes a critical role in supporting online learning in 17 Public Elementary schools. In this stage, all the learning interactions between students, teachers, parents, and learning resources were taking place. Teachers use the WhatsApp Messenger application to support and manage online learning. The group chat feature allows two-way communication between parents and teacher since not all of the students have access on their own WhatsApp account.

Every day, the teacher starts the class by greeting the member of the group chat. After that, the teacher will follow up by providing online learning resources and media and give learning instruction regarding the learning resources and media. Sometimes if there is a TV broadcast schedule that relates to the topics, the teacher will inform the broadcast schedule and give assignments related to the TV program in the group chat. Teachers can also add online learning resources and media other than those mentioned in the online curriculum document from the Education Office of Greater Jakarta.

The assignment has a crucial role to monitor the learning progress and trigger the actual learning that is happening. Using WhatsApp Messenger as supported technology in Online Learning means that there is no virtual face-to-face meeting between teacher and students. Therefore, the teacher needs to ensure the

engagement of students through active contribution in submitting the assignment.

The teacher also gives feedback on each assignment through group chat or private messages to the respective students. Feedback also takes an important role to maintain students' engagement as the teacher told us that the more intensive the feedback teacher gave the more enthusiastic parents and students to accomplish the assignment. The teacher providing feedback such as "the writing is very neat, mom happy to see it" to maintain the good performance of students. The teacher also providing feedback to help students' improvement such as "next time, try to cut it more neatly, it will be awesome".

The assignment submission will also send via WhatsApp Messenger Application. After the teacher gives learning instructions and assignments to be done in a day, parents then will submit the assignment to their children through a chat group or by privately messaging the teacher. It is not always parents that interact with teachers through chat groups or private messages, sometimes students can directly interact with the teacher using the WhatsApp account of their parents.

Parents' role in WhatsApp Messenger application-based online learning that was implemented in 17 Public Elementary schools is also crucial. Parents become substitute teachers at home, the ones who guide students in accomplishing an assignment, as well as the ones who control the learning progress. It is challenging because we found out that parents feel overwhelmed by the additional task to guide the children's study at home. It is because parents already have their responsibility in arranging home, some parents also have a responsibility to work, therefore it is not easy for parents to fulfill the role as a substitute teacher at home.

The fact that not all parents in 17 Public Elementary schools are ready to assist their children to study at home makes schools realize that the study at home learning activity should be lighter in terms of learning weight. This arrangement needs to be implemented to maintain learning motivation. A teacher told us that there is a time when she gave an assignment to students to make a mock-up of a cube using nearby materials such as bread. Unexpectedly, some parents submitted their complaints because the activity was considered too burdensome, they had to provide bread and it would be messy.

Besides the support of parents, schools also have a limited supporting infrastructure for online learning. One of the backgrounds that make schools prefer to use the WhatsApp Messenger application is because teachers and parents find it difficult to conduct virtual face-to-face learning. The teacher once held a virtual face-to-face meeting using Zoom Meeting, but the video conference session got out of control. Both students and teacher were not familiar with using Zoom Meeting which made non-conducive learning, so the teacher was reluctant to use it again.

In the implementation stage of WhatsApp Messenger application-based online learning, it can be concluded that:

- schools and teachers need to maintain the engagement of not only students but also parents.
- Assessment and feedback have a crucial role in monitoring the result and ensuring students achieve the intended learning outcomes.
- The more complex learning activity will cause less engagement of students.
- Schools and teachers should take parents' and students' capability on following online learning into account in deciding on the online learning model.

## CONCLUSIONS AND SUGGESTION

The Covid-19 pandemic has forced us to get out of our comfort zone, it also happens in the education sector. In Indonesia, the long-standing practice of face-to-face education must immediately change to online and distance learning to help prevent the spread of the virus following the government's Study From Home policy. Changes without careful planning make schools have to look for the most feasible alternative to run.

Online learning, in general, is run with the support of an LMS to help manage and maintain the learning path in online learning. In Indonesia, the privilege of using LMS is not shared by all schools. Apart from not having the capability to design LMS-based online learning, the unfamiliarity of schools, teachers, parents, and students with using LMS made them reluctant to use LMS in supporting online learning in some schools.

This condition also occurred in 17 Public Elementary Schools at Palmerah in Greater Jakarta that chose the WhatsApp Messenger application to support online learning in their schools. In a series of data collection in the field, the researcher concludes the case study of

WhatsApp Messenger application-based online learning case in two main stages, first in the planning stage focuses on how to plan WhatsApp Messenger application-based online learning in 17 Public Elementary School Palmerah in Greater Jakarta. Secondly focus on the implementation stage to describe how is the implementation of WhatsApp Messenger application-based online learning.

In the planning stage, the government's role has critical point in setting the minimum standard on how online learning will be carried out in all schools. Through a top-to-bottom approach, the Education Office of Greater Jakarta already provides schools with online learning curriculum documents. The school then decides the feasible approach to implementing the online learning curriculum based on the available resources. In this case, 17 Public Elementary schools decided to use the WhatsApp Messenger application.

Using the WhatsApp Messenger application to support online learning, 17 Public Elementary School has already designed the online learning lesson plan carefully. This is also by the support of the Education Office of Greater Jakarta. The online learning curriculum document contains all the necessary items to assist schools in conducting online learning. Education Office already lists the supported learning resources and media to be used in online learning.

In the implementation stage, the role of teacher and parents become crucial to supporting students in online learning. Parents, in this case, should become substitute teachers to assist students in their studies from home. The teacher should monitor learning progress through assessment and give effective feedback to maintain the engagement of students and parents. School and teachers always remain to make simple but meaningful learning to avoid stress on parents and students during the pandemic.

Furthermore, the case of WhatsApp Messenger application-based online learning has shown us that online learning platforms are not only limited to LMS or video conference applications. The use of messenger applications can be an alternative considering the readiness of respective stakeholders. We suggest research in the future to explore messenger application-based online learning in Indonesia in the area of outcomes evaluation, as well as students' and parents' satisfaction in a wider range of data. Through that research, we can design meaningful online learning for students by

taking teachers, parents, and students' readiness for online learning into account.

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