Platforms for Online Learning Process in Public Elementary Schools of Rural and Urban Areas

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Abstract. The utilization of online learning platforms in elementary schools is affected by several factors. One of the factors is the difference in the region, rural and urban. The objectives of this study are to investigate a) the platforms used to support online learning in public elementary schools based on regional differences, b) the online learning process through platforms for rural and urban areas, and c) the teacher's reason for selecting this platform. This study is a case study of online learning at a public elementary school in Bali, Indonesia. Mixed methods were used as the approach, with an explanatory sequential mixed methods design. A total of 179 public elementary school teachers were agreeable to being involved as respondents. They were spread out in both rural and urban areas in nine regencies and municipalities in Bali province. They filled in online questionnaires. Furthermore, interviews were conducted with 10 teachers who filled in the questionnaire. The data obtained were analyzed descriptively to determine the percentage. Thematic analysis was used in analyzing the interview data. The results showed that there are no significant differences in the platform used for online learning between rural and urban elementary school areas in Bali. There are similarities in the choice of the main platform between teachers in rural and urban areas in the implementation of online learning. The reasons for the similarity in choosing online learning platforms by teachers in the two regions were also revealed in the study. Thus, several recommendations are discussed in this paper.

Keywords: Platforms · Online Learning · Rural · Urban · Public Elementary School

1 Introduction

People who have literacy will be able to compete in the era of the industrial revolution 4.0. In order to make it happen, producing quality education is a big responsibility for teachers [1, 2]. Quality education can be achieved if teachers conducted quality learning as well. Quality learning can also be achieved through the use of information and communication technology (ICT). Teachers can use various types of ICT to help students acquire skills. These skills include being able to think creatively and innovatively, having information literacy, communication skills, collaboration skills, etc. [3–5]. One of the uses is in the form of online learning.

A. Amrullah et al. (Eds.): ACCESS 2021, ASSEHR 686, pp. 409–419, 2023.
https://doi.org/10.2991/978-2-494069-21-3_44

Online learning is a teaching and learning process involving synchronous and asynchronous environments [6, 7]. An asynchronous environment allows teachers and students to meet virtually in real-time [8]. Giving feedback can be done directly. Meanwhile, the asynchronous environment does not allow for it. Online learning in both types of environments requires internet access. The platforms used are also varied, both paid and free. Through existing platforms, teachers can be creative and innovate to create quality online learning [9]. Likewise, students can study at flexible times and places, to develop their competence.

Due to the COVID-19 pandemic, online learning is currently the main choice of teachers around the world. Massive changes are made by the teacher so that students continue to learn. At this time, teachers are demanded to shift from face-to-face learning to online learning suddenly. For developed countries, this transition is not a significant problem [10]. In contrast to countries whose education systems are oriented toward traditional learning methods. Switching to online learning is not as easy as turning the palm of the hand. It is undeniable that this sudden change caused many problems in its implementation practice. For example, in India, teachers are demanded to undergo a drastic change from face-to-face learning to online learning. Various obstacles occurred due to this change, such as accessibility, policies, etc. In Pakistan, many educational institutions have stopped conducting online classes due to the lack of e-learning and its management [10]. In Georgia, the transformation from face-to-face learning to online learning also happened suddenly [8]. The problem is that infrastructure support for students in rural areas is not sufficient for online learning.

Those phenomena also occur in Indonesia, especially in elementary schools. Teachers face a big challenge in implementing online learning. It is happening because not all students can use the information of the technology, including the ease of access [11]. The next problem is the difference between urban and rural areas which causes various online learning problems [12]. The results of the study show that there are urban and rural areas in terms of education [13]. The infrastructure and economic conditions of the people in both regions affect the implementation of online learning [7, 12]. Internet services can be used well by urban communities; however, rural communities are not. The facilities for each student to study online also varied between rural and urban areas [14]. English learning in rural areas during the pandemic was more of a combination of online and offline learning, which was predominantly offline learning due to facilities [12, 15].

Based on the explanation above, there are no studies that specifically study the differences in online learning in urban and rural areas in public elementary schools. The difference meant is mainly in the use of platforms to organize online learning. The discrepancy that occurs causes this study to reveal the online learning platform used in elementary schools, in two different areas, namely urban and rural areas. Thus, the purpose of this study is to investigate a) the platforms used to support online learning in public elementary schools based on regional differences, b) the online learning process through platforms for rural and urban areas, and c) the teacher's reason for selecting this platform. This research will be found suitable platforms for online learning for teachers' and students' needs in rural and urban areas.

2 Methods

2.1 Research Design

This research is a case study in public elementary schools in Bali, Indonesia. The problems investigated were the platforms used for online learning in public elementary schools in urban and rural areas, the use of the selected platforms in the learning process, and the reasons teachers integrated the identified platforms. A mixed-method approach was used in this research. Since the research combines quantitative and qualitative methods, the mixed-method approach was implemented to get a detailed and deep understanding of the phenomenon [16]. The design of this study is an explanatory sequential mixed methods design. This method begins with a quantitative investigation, and the results of the investigation are used as a source for qualitative investigations [17]. This research was approved by the Research Ethics Commission of the Institute for Research and the Community Service Ganesha University of Education.

2.2 Respondents

Elementary school teachers in Bali province, Indonesia were the subjects of this research. They were being the respondents who have information about online learning platforms in elementary schools during the pandemic. Data collection was conducted by cluster sampling. This sampling was selected because the respondent comes from rural and urban areas. Each region took 100 people samples, so the total sample was 200 respondents. There were 179 public elementary school teachers in Bali offered as respondents, 81 teachers from the rural area and 98 teachers from the urban area. They are spread out across nine regencies and municipalities in Bali province. The percentage of unfilled questionnaires was 11.7%.

2.3 Data Collection

The data were obtained by three techniques, namely questionnaires, interviews, and document studies. The questionnaire technique was applied online. The filled-out questionnaire contains a profile and questions. Identity is in the form of email and working area. The ethical clearance is based on the Declaration of Helsinki. Furthermore, the aspects of questions regarding the online learning platforms used consist of 1) the platforms used, 2) the online learning process through platforms in rural and urban areas, and 3) the reasons for selecting the platform. The content was then broken down into 10 questions.

The interview technique was used to confirm the data obtained in an open questionnaire. 10 respondents were selected. Respondent data is not shown. Interviews were conducted through mobile devices. Important points in the teacher's answers were written and were used in the analysis process. Furthermore, the teachers who participated in the interviews sent documents related to online learning by e-mail.

2.4 Data Analysis

Frequency and percentage were used to analyze the questionnaire. In addition, thematic analysis was used for the qualitative data. This analysis provides detailed and rich insights into the studied phenomenon [18]. Double-check and note-taking of the obtained data were done to make it be understood properly. The prominent information obtained was identified, sorted, analyzed, organized, and described in themes [19].

3 Result and Discussion

3.1 Result

The findings are described in several parts, namely a) the platforms used to support online learning in public elementary schools based on regional differences, b) the online learning process through platforms for rural and urban areas, and c) the teacher's reason for selecting this platform.

3.1.1 Online Learning Platforms Based on Regional Differences

Most teachers conducted online learning by using WhatsApp (WA) application either through private or group chats. The WA application is used in rural areas where the network is still covered and in urban areas. In addition, other platforms are used such as Google Classroom (GC), Google Meeting (GM), and Zoom. The following are the platform's usage in both regions.

Table 1 presented in graphical form, can be seen in Fig. 1.

In general, the dominant platform used to conduct online learning in rural and urban areas is the WA application. WA application usage in rural areas is 100%. The percentage of WA usage in rural areas is 26.5% higher than in urban areas. Other platforms, such as GC/GM/Zoom, are selected for both regions for a virtual class. The difference between the use of these selected platforms in rural and urban areas is only 3.5%, with rural areas being the higher percentage. Thus, no significant differences were found in the use of platforms for online learning, both in rural and urban areas.

Table 1. Platforms Usage Frequency & Percentage in Urban and Rural Areas

Urban Areas	f	%
WA	71	73.5%
Google Meet/Zoom/Google Classroom	27	27.5%
Rural Areas	f	%
WA	81	100%
Google Classroom/Google Meet/Zoom	25	31%

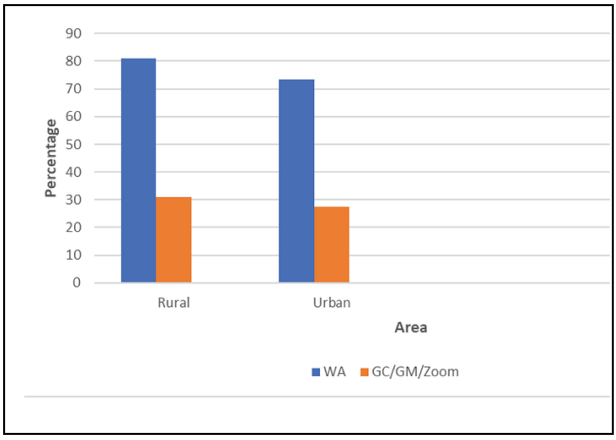

Fig. 1. Online Learning Platforms Usage Percentage between Villages and Cities

3.1.2 Online Learning Process Through Platforms for Rural and Urban Areas

The teachers of urban and rural areas in public elementary schools still conducted online learning as they normally do in the classroom. They gave material presentations, discussions, and assignments. This general pattern is applied differently by teachers through online learning platforms. The way of using platforms in the online learning process is divided into two, namely asynchronous and synchronous.

The asynchronous pattern is conducted through WA and GC, both in rural and urban areas. The asynchronous pattern with WA and GC is conducted to send the materials, assignments, and questions, either in the form of photos, files, YouTube videos, or google forms. Photos of student answers or assignments are sent back to the teacher through the platform. In addition to these activities, asynchronous discussion, and question and answer activities are also conducted through the platform. The process occurs in both areas. In other words, there is no difference in the asynchronous online learning process in urban and rural areas. Online learning process follows these steps:

- Teachers upload instructional material, tasks, and tests to the online learning platform
- Q&A discussion by students
- Reading the material, doing the tasks and tests by student
- Sending the tasks and answers by student

Synchronous patterns are shown with GM or Zoom, both in rural and urban areas. These platforms are used for a virtual class. The duration of the virtual class is 1 h to a maximum of 1.5 h. The learning activities done are preliminary activities, main activities, and closing activities. Preliminary activities involved were praying, checking student attendance, singing the national anthem of Indonesia Raya, giving apperception, and conveying learning objectives. The main activity is carried out by presenting learning media by the teacher, followed by question and answer activities. Furthermore, students are asked to work on the tasks listed in the worksheets offline or online within a certain time duration. At the agreed time, students submit their work. Then, the teacher closed

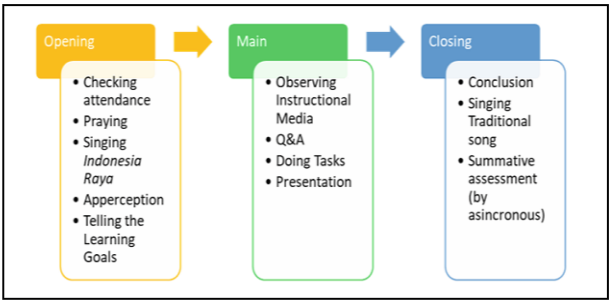

Fig. 2. Synchronous Online Learning via GM/Zoom Platforms in Rural and Urban Areas

the lesson by delivering the conclusion of the material, singing the folk song, and closing. Testing is done asynchronously. Those kinds of learning processes occur in both urban and rural areas. The asynchronous online learning process chart through platforms both in rural and urban areas can be seen in Fig. 2.

3.1.3 Reasons for Selecting the Platforms

The teachers have reasons for selecting certain platforms for the online learning process. These reasons are as follows.

3.1.3.1 Supporting Internet Connection

The teachers' main concerns in selecting platforms are based on the platforms that are commonly used for communication in the community. Considering that, these platforms can still be accessed with low internet connections in rural areas. However, the message deliverance cannot run as smoothly as in urban areas. In other words, internet connection support is one of the basic reasons for selecting online learning platforms by teachers. The following are excerpts of the teacher's statements (coded T).

T1: The network becomes a problem to operate online platforms, so selecting platforms to be supported by an internet connection.
T4: Limited network to students, so platforms that are easy to be accessed are selected.

3.1.3.2 Supporting Tools

The teacher's selection of platforms is also based on the students' supporting devices. Generally, elementary school students do not have personal gadgets, so they use their parents' or older siblings' gadgets for completing assignments or online meetings. To be able to do the assignments or online meetings, they have to wait for their parents to come home from work or wait their turn to be able to use gadgets. In addition, parents' gadgets generally do not support platforms with large sizes due to the limited capacity of the gadget. The following are excerpts of the teacher's statements (coded T).

T2: Parents are not burdened by having to download the applications, perhaps it might the cellphone used by parents do not support if they have to download the applications.

T5: Parents' cell phones do not support online learning that involves platforms with large sizes

3.1.3.3 Easy to Use

One of the reasons for selecting online learning platforms teachers is used easily. Ease of the operation by students and convenience for the parents to help students learn using the chosen platforms.

T6: WhatsApp is easy to use as a student companion when studying at home.
T3: Parents are more familiar with the use of WA, GC, GM, and Zoom, so they can help children to operate the platforms

3.1.3.4 Financial Supporting

Funding support to purchase internet data is also the reason for selecting the most suitable online learning platforms. Not all students have Internet data every day. This is partly because of the limited income of their parents during the pandemic. Thus, teachers choose platforms with less data consumption.

T7: Students don't have enough quota, so they choose a platform that doesn't use a lot of internet data
T8: Students don't have internet data every day, because of their parents' low income.

3.2 Discussion

It is undeniable that WA has become the main platform for online learning. WA is used by 70% of tutors in communicating with their students [20]. WA provides the advantage of being the fastest and easiest way to communicate. Even in rural areas, WA is accessible though with a few glitches. It becomes the most selected platform to communicate since it is the fastest in replying and sending messages compared to other platforms [21]. Another reason is that WA is following the thoughts, beliefs, and attitudes of teachers towards ICT. The optimal use of ICT in the classroom depends on the teacher's way of thinking, attitudes, and beliefs, as well as the teacher's self-confidence [22, 23]. In rural areas, some obstacles are faced to accessing computers and laptops [24]. The available technological tools are used to support the limited learning process in cities, and conditions in villages are even worse [25].

In synchronous learning with zoom or google meetings, learning is generally done once a week. The frequency of online learning using applications is varied, such as every day, a week, or two to three times a week [26]. These applications are more widely used by teachers in urban areas because of a strong internet connection, qualified parents and teachers, teacher competence in using technology, parental understanding and support, and costs that can be covered by parents. The use of technology for the learning process needs to consider internet connection, supporting tools, economy class, infrastructure, technology support, community resources, teacher training, understanding, and support

of parents [24, 26, 27]. Meanwhile, for students in urban areas, the response to the use of technology is better than students in rural areas [28].

One of the factors that affect the implementation of online learning in elementary schools in the competence of teachers in technology. Technology is an effective tool for learning [29, 30] and empowering students to actively shape their learning [30]. It can help teachers organize effective learning for students so that they can develop all aspects of their learning [31, 32]. Teaching skills using technology is one of the aspects [33, 34]. Teachers need to understand the pedagogical use of technology and become masters to support the learning implementation [5, 35]. Teachers must be able to develop learning that produces learning experiences according to the digital era for students, learn and work according to the 21st century, and promote a digital society [36]. Teachers' knowledge about the use of technology for learning purposes is only limited to communication and searching purposes [34]. In other words, the lack of knowledge, skills of teachers in IT, and the inadequate number of IT-based learning media devices lead to weak teacher competencies [37]. For this reason, professional development related to the integration of technology in learning is crucial to increase teachers' technological knowledge [38].

4 Conclusion

There is no prominent difference in the online learning process in public elementary schools in both rural and urban areas. The platforms commonly used by teachers in both regions are WA, GC, GM, and Zoom. WA became the dominant platform used by teachers. WA and GC are used for asynchronous learning. Meanwhile, synchronous learning is done generally once a week through GM or Zoom. The online learning process that occurs is similar to the traditional class. These platforms are selected based on the supporting internet connection, supporting tools, ease to use, and financial support. Based on the results, further investigation on the professional development of teachers' competency needs to be done. In addition, the government needs to build adequate infrastructure and economic strengthening to support the online learning process, both in rural and urban areas.

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