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Training and implementation of google applications for online learning in the pandemic covid-19

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Abstract. Knowledge of the concepts of online learning and teacher skills in the use of information technology, is an important factor of online learning in the pandemic covid-19. Facts show that teachers' knowledge and skills in online learning and the use of information and communication technology are still low. On the other hand students are prohibited from bringing mobile devices to school, with the reason to interfere with the lesson. Teachers and schools need to get help and guidance, so they can maximize learning even in the pandemic. The problem raised is how to improve the skills of teachers in online learning during the co-19 pandemic? The purpose of this activity is to provide skills as well as an understanding of how to use information technology for effective, efficient and safe learning from negative stigma that has been feared by schools and teachers. This activity using the guided training method and was carried out in four stages namely observation, training, mentoring and evaluation. The results of the activities showed that the training and technical guidance of online learning based on google application improve the skills of teachers in online learning based on google application improve the skills of teachers in online learning based on google application improve the skills of teachers in online learning based on google application improve the skills of teachers in online learning based on google application improve the skills of teachers in online learning

1. Introduction

The Era of education in industrial revolution 4.0 known as Education 4.0 which is characterized by the use of digital technology. The learning process using digital technology with cyber system has been able to make the learning process take place continuously without space and time limits. In facing this era, an educator must be able to use information technology to improve the quality of the teaching and learning process at every level of education. One of the challenges faced by teachers is *Information and communication technology literacy*. Information and communication technology (ICT) literacy is the obligation of teachers to adapt teaching skills in digital era. ICT literacy is the basis that must be mastered in order to be able to produce students who are ready to compete in the face of the industrial revolution 4.0. thus information technology based learning cannot be avoided [1].

The STEM-based learning approach (*science, technology, engineering, and mathematic*) is capable of answering the severe challenges of education today so that becomes "the main innovative driving machine" [2]. Teachers have a special role, in addition to implementing STEM in learning, also becoming agents of change that transmit STEM to other teachers, so that STEM truly becomes an educational culture. The implication of the STEM approach is the application of technology with certain procedures and steps to facilitate the work of solving a problem with certain calculations. Research shows that the use of STEM in learning can improve student learning outcomes[3],[4].

One way to face the challenges of this digital age is to develop technology-based learning. Technology-based learning can be done by using *hardware* and *software* in learning. Technology hardware such as computers, laptops, smart phones, LCDs, etc., while software includes applications such as Microsoft Word, Microsoft Excel, PowerPoint, Google, Google Forms, and others. If these devices are utilized to the maximum it will facilitate and facilitate the learning process[5]. The google

application with one of the built-in components namely google documents is relevant for use in learning in the industry era 4.0[6].

But the current conditions are not as expected. Especially in partner schools, the use of computers or laptops is limited to the administration of learning such as value management and the creation of learning tools. In the process of delivering material in class, the teacher still uses the old way. Submission of material with the help of teacher's books and student books. Teachers and books are still the main sources of information in classroom learning.

Nowadays, internet access is easy to get, especially in urban areas. Based on the results of interviews with several teachers as partner schools, it was founded that their school was facilities with Wi-Fi. The use of internet via Wifi is aimed at school administration activities, such as reporting dapodic data. Especially for teachers, internet access is used for social media such as Whatsapp, Facebook, and Instagram but has not been maximized for learning. This condition shows that teachers itself have not been able to use wifi facilities for learning, how about the students. For this reason, the school's side made rule that all students are prohibited from bringing mobile phones to school [7].

Utilization of internet access for learning activities is still rarely done. This is due to the limited knowledge of teachers about the use of internet access in learning. For this problem, it is offered training solutions on the use of google applications (google forms, google docs, google worksheets) for elementary school teachers. Google applications are tools to help someone plan events, send surveys, give quizzes to students or gather information that is done easily and efficiently. Besides google applications are interactive, both online and offline. Google application is an online application and the most easily accessed and not paid, only requires an Android-based device that is activated with a gmail account, this application can be used for learning.

Utilization of information technology is increasingly needed in the midst of the co-19 pandemic, this pandemic undermines the conventional learning pillars that have been practiced by teachers. During the co-19 pandemic, there was a "coercion" of online learning at all levels of education including elementary schools[8]. Apart from the constraints of applying online learning according to the results of identification namely the limited mastery of the internet by teachers, limited facilities and infrastructure, limited internet access and lack of funds in emergencies[9]. The acceleration of the closure of several educational institutions[10] as the impact of the co-19 pandemic does not occur. Training and implementing online learning at the elementary school level not only imparts knowledge concepts, but also how teachers are skilled in applying online learning

2. Method

Training uses the adult education approach, commonly called the Andragogy approach, referring to the following principles: (1) an adult learns well when he or she fully participates in activity activities; (2) adults learn well when it comes to things that are interesting to them and are related to their daily lives; (3) adults learn best if what is learned is useful and practical; (4) encouragement and repetition that continuously helps a person learn better; (5) adults learn best if they have the opportunity to make full use of their knowledge, abilities, and skills in sufficient time; (6) the learning process is influenced by past experiences, and the power of thought of learning citizens; and (7) good mutual understanding in accordance with the main characteristics of adults helps the achievement of goals in learning. Techniques or methods used in training are; group discussions, FGDs, *brainstorming* and demonstrations.

Work procedures to be taken to support training and mentoring methods with andragogy learning approaches are:

- 1. The proposing team observed the problematic school (already implemented before preparing a proposal).
- 2. The proposing team contacted the Chair of the Cluster IX of South Palu District and conveyed the logical reason for being chosen as the target of community service activities as evidenced by the Letter of Willingness of the Target Audience.

- 3. The team compiled and proposed proposals to carry out community service activities for funding from the Faculty DIPA.
- 4. The proposing team compiled a handbook on the use of the google application for elementary school learning in Cluster IX, Palu Selatan District, Palu City.
- 5. The team, carry out training on the use of the google application for learning.
- 6. The team, implement mentoring for its application in each school.
- 7. The team, evaluated the results of the training and mentoring.

Theprocedure of activities can be visualized as follows:



Figure 1. Training Flow Chart and Implementation of Online Learning Based on Google Application

3. Result and Discussion

Training activities and implementation of online learning based on Google applications are carried out in the Teacher Working Group (KKG) Region IX Region 3 Palu. KKG Cluster IX region 3 Palu has an office in SD InpresBirobuli 1 on Jln. AbdulrahmanSaleh, Palu Selatan District, Palu City. Cluster IX KKG also accommodates 12 elementary schools with 128 teachers. The results of the identification of problems faced by teachers in the Task Force Teacher Group IX region 3 are as follows:

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No **Component Ability** Description Condition 1 Problem online learning knowledge Concepts and theories of online learning lack 2 Online learning Skills applying online learning through lack of platforms other than google applications 3 Skills for using google applications Skills for using google applications in lack of addition to learning

Table 1.Identification

Based on the description in the situation analysis, it can be concluded that the problem faced by elementary school teachers in the KKG Cluster IX Region 3 Palu is the lack of understanding of the use of information and communication technology in learning. The use of Google applications in learning, is the first step to utilize information and communication technology in elementary schools. The lack of teacher ability in mastering the internet by teachers[9 is overcome by training methods and mentoring with andragogy approaches.

The results of the identification of the ability of teachers in cluster IX, justifying the ability and skills that must be possessed by teachers in order to carry out online learning. Knowledge and skills recommendations that must be possessed by teachers based on the results of the team's formulation namely; concepts and theories of online learning, knowledge of the default Google application that is relevant to learning, skills in using the Google application for online learning, evaluation skills and follow-up to online learning. These four components are indicators of the success of the activities carried out.

Activities are divided into four according to the components of knowledge and skills that become the orientation. This is to facilitate the coordination of activities, effectiveness and time efficiency. The results of the implementation of the activities are shown in Table 2 below:

	Component	Training results		
No		Mastering (participants)	%	Remarks
1	Concepts and theories of online learning	36	100	Participants with very
2	knowledge on google the default application that is relevant to the learning	35	97.22	gooddescriptions,good and enough to be
3	skills use google apps for online learning	33	91.67	included in the
4	skill evaluation and follow-up of online learning	33	91.67	category of mastering
	Average	34.25	95.13	Very good

Table 2. Teacher ability after training

Results for training activity and the implementation of the use of the google application in table 2 above showed that the mastery of participants in the training material is in the very good category, or in other words the achievement of organizing the training is very high. The results of the activity also show that the google application and default are the most familiar and easiest to apply online learning applications. Using the google application does not need to download an application that only aggravates the operation of the device, is not difficult to operate and google is an application that can be found on all devices activated by gmail[6],[11].

Online learning applications that are attached to Google are interactive online learning and contain two properties needed in online learning, namely synchronous and asynchronous. Some online learning applications only contain material so that the communication that is developed is one-way Journal of Physics: Conference Series

communication. In the google application the teacher can build multi-directional communication, and can direct students to the material-relevant material by including material links in class assignments.

4. Conclusion

Based on the results of the activities and discussion, it can be concluded that the improvement of teacher skills in online learning during the co-19 Pandemic period can be done through online learning training. The learning platform used in training is the Google application. The choice of Google application is based on several advantages of Google applications that are not owned by other online learning applications. Suggestions, so that this activity can become an annual agenda for lecturers as an effort to disseminate good practice in the university environment. In addition, this activity is an effort to fulfill the obligations of the Tri Darma of Higher Education

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