

Interactive Worksheet Development in Mobile Learning Environment

A Professional Development Training for Elementary School Teacher

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ABSTRACT

The purpose of this paper is to describe the training process of the primary school teacher professionalism development scheme to be able to develop an interactive worksheet based on a mobile learning environment for elementary school students. This study used a descriptive study to present the result of the questionnaire and process of the training. The subject of this study were 39 teachers from Malang City, Indonesia that were involved in that training. The data analysis used descriptive analysis as a tool to present the result. This study used several steps to describe the training process: planning, implementation, and evaluation. Based on the result, the level of ability from the first day was 100%, while the second day reached 79% and the third and fourth days by 64%. In general, almost all participants are cooperative when carrying out synchronic activities through zoom meetings. The discussion about the strength and the drawback of this training is discussed further.

Keywords: *Interactive worksheet, Mobile learning environment, Professional development program, Elementary school teacher.*

1. INTRODUCTION

The change in learning today is so drastic from the previously used entire face-to-face to online learning. Online learning that is currently taking place due to the COVID pandemic makes teachers still able to carry out effective learning despite being a problem in itself [1]. This impacts the use of massive technology where the use of smartphone devices (mobile) becomes inevitable. This is supported by the effectiveness of mobile learning environment-based learning, which becomes an online-based learning alternative [2]. Studies show that in online education in this pandemic era, teachers have difficulty managing time related to online learning, including preparing learning devices [3], [4]. Moreover, teachers find it challenging to develop digital-based learning devices, one of which is worksheet development [5].

Related to online learning today, the context of self-learning becomes the main point. This is because in online learning, the role of students becomes more dominant related to the ability to be able to complete and master learning [6]. As for elementary school students, the self-study process is usually accompanied by parents

because education must be done at home. Therefore, it takes a learning device, a worksheet as a mobile-based home learning tool.

The interactive worksheet itself initiated the principle of worksheet development that adds features of using interactive applications that can respond to students. In this case it is a digital device in the form of learning tasks that teachers present to students [7]. The advantages of developing interactive worksheets are related to the ability to duplicate worksheets, provide direct comments, edit work results or answer directly at home, and give a response back from work provided by students [8]. Therefore, the advantages of using interactive worksheets support the idea that teachers can increase the participation of their students in the current era of digital learning.

Based on the results of the needs analysis conducted, teachers feel they have not mastered the skills to develop learning tools, especially developing interactive worksheets for students. This is important because, in mobile-based learning, students almost always use smartphone devices need to learn more actively and not

only be given one-way tasks. The purpose of this paper is to describe the training process of the primary school teacher professionalism development scheme to be able to develop an interactive worksheet based on a mobile learning environment for elementary school students.

2. LITERATURE REVIEW

2.1. Mobile Learning Environment

In general, mobile-based learning is a new type of learning that supports the use of mobile devices. This use allows students to enjoy more personalized learning [9], [10]. Some studies show that the use of mobile learning is positively associated with improved student learning outcomes [9], [11], [12]. In particular, mobile learning is closely related to the personalization of learning so that students can do learning according to the preferences shared by each individual.

2.2. Worksheet as Diagnostic Assessment in Learning

Student's worksheet can be used as a diagnostic step to understand about what they can learn and achieve. In this process, the student will be assessed whether the difficulties they found. Using an interactive worksheet, the process of diagnostic assessment will be real-time so teacher can give immediately feedback during this process.

Empirical studies state that one of the important factors to support student learning and involvement, especially in working on worksheets, is self-assessment [13]. Self-assessment is a formative process in which students reflect on their own work and give assessments related to the goals achieved [14]. With regard to the definition, the main purpose of self-assessment is so that students can monitor the results of work in a regular manner that is specifically for adult learners, in this case students in college [15]. Peer assessment is generally an assessment process in which students assess the results of peer work ([16]. Related to the assessment procedure, studies show some positive impacts of peer assessment, even more so at the college level [16], [17]. Further studies show that students feel they can benefit from inspiring the work results, especially to improve the results of work done [18].

3. METHOD

This study used a descriptive study to present the result of the questionnaire and process of the training. The subject of this study were 39 teachers from Malang City, Indonesia that were involved in this training. The data analysis used descriptive analysis as a tool to present the result. This study used several steps to describe the

training process: planning, implementation, and evaluation, and analysis stage.

3.1. The Planning Stage

At the planning stage, the thing that is done is to coordinate with the team that has been instructed to make a plan for the implementation of devotion. In this stage also conducted a needs analysis related to the development of interactive worksheets for mobile-based learning. At this stage, it was also agreed on the material and schedule of devotional activities carried out as well as instruments for the evaluation of training programs that have been developed.

3.2. The Implementation Stage

The implementation stage is carried out with three sessions and is based on a mobile learning environment. The first session (in) is the implementation of training using face-to-face by considering health protocols, namely by conducting material identification stages including material (a) digital era learning, (b) mobile environment-based learning, and (c) the development of interactive worksheets. This session also conducted mentoring and introduction of LMS-based online classes (Google Classroom) to carry out online learning. At this stage, learning analysis is also carried out by participants at each level of the class who can adjust the interactive worksheet developed. The next session is an on session where this session requires participants to perform (trial) to interactive worksheets that have been developed in their respective classes. The last session goes back to the session where this session is a stage of presentation and assessment of the process and the results of the development of interactive worksheets presented and piloted in their respective classes. At this stage, self and peer assessments are also carried out to review the results of development that has been done. After that, the products that have been developed will be collected in online classes and will be presented with a compilation.

3.3 The Evaluation Stage

This evaluation stage is the final stage of service which also consists of a reporting section to review the success of the process and the results of community service implementation. At this stage, the process is also carried out to publish articles as part of the promised external. In addition, at this stage, the process of reflection by the team on the achievement of community service has been designed and carried out.

3.4 The Analysis Stage

The devotion is carried out for four days with a duration of 32 hours run from 21-24 October, which is carried out in synchronic and asynchronous. In general,

the involvement of participants in synchronous and asynchronous activities is quite good. For the task, 27 participants out of 39 participants who signed up successfully completed the activity. Regarding the evaluation of activities, during the initial period of implementation of each material and the end of the participant's activities are asked for feedback through Google Form and the status of feedback questionnaire returns is approximately 90%.

4. RESULT AND DISCUSSION

The training conducted has successfully provided a professional development program to teachers in Malang City, especially related to the Development of Interactive Worksheet Based on Mobile Learning Environment. This implementation involves teachers in the city of Malang who are netted online through the Google Form

registration page. From the initial distribution results as many as 39 teachers are willing to follow the activity.

In the questionnaire that is also shared also netted data related to the use of mobile devices most often for activities that include chatting / texting, video call, social media blogging, checking email, doing office tasks, checking, and correcting, reading e-books, news. In addition, data was also dug up related to the intensity of use of applications used to send messages (messaging) consisting of WhatsApp, Telegram, Facebook Messaging, Line, and Gmail. The intensity of application /platform use used for learning is also recorded the highest, namely Google Classroom with more than 70% of respondents. This is also related that study shows Google classroom is a mobile learning initial platform [5], [19].

Table 1. Demographic Data of Respondent

	Indicator	Number	Percentage
District	Sukun	7	18%
	Kedungkandang	9	23%
	Lowokwaru	10	26%
	Blimbing	10	26%
	Klojen	3	8%
Grade	Grade 1	2	5%
	Grade 2	4	10%
	Grade 3	7	18%
	Grade 4	5	13%
	Grade 5	9	23%
	Grade 6	12	31%
Gender	Female	38	97%
	Male	1	3%
Certification	Yes	28	72%
	No	11	28%
Gadget ownership	1 item	21	54%
	2 items	17	44%
	3 items	1	3%

The first day of training is carried out in asynchronously using the Google Classroom page with class code selected. The Google Classroom page is presented in Figure 1 below. On the first day of activities that are carried out is to access pages related to self-introduction and read materials related to mobile learning environment.

Furthermore, there are instructions to do self-introduction and pedestal to follow the training. Related to this as many as 41 participants (because there are several accounts with different names joined) all answered or responded so that the success of the initial activity was 100%. The thing that becomes strengthening

in this activity is first, the absence of a task that is easy. Participants were only asked to read by themselves. This is in line with the use of self-assessment as a learning process [14], [17]. In addition, related to the task participants are also asked to introduce themselves only relatively easy.

In the activity on the second day is carried out in synchronic using zoom meeting as presented in Figure 2 As the second Zoom has said, it reviews material and shared practices. For the first material that is related to HOTS-Based worksheet which is continued the second material is interactive worksheet and the third material is interactive worksheet application practice material.

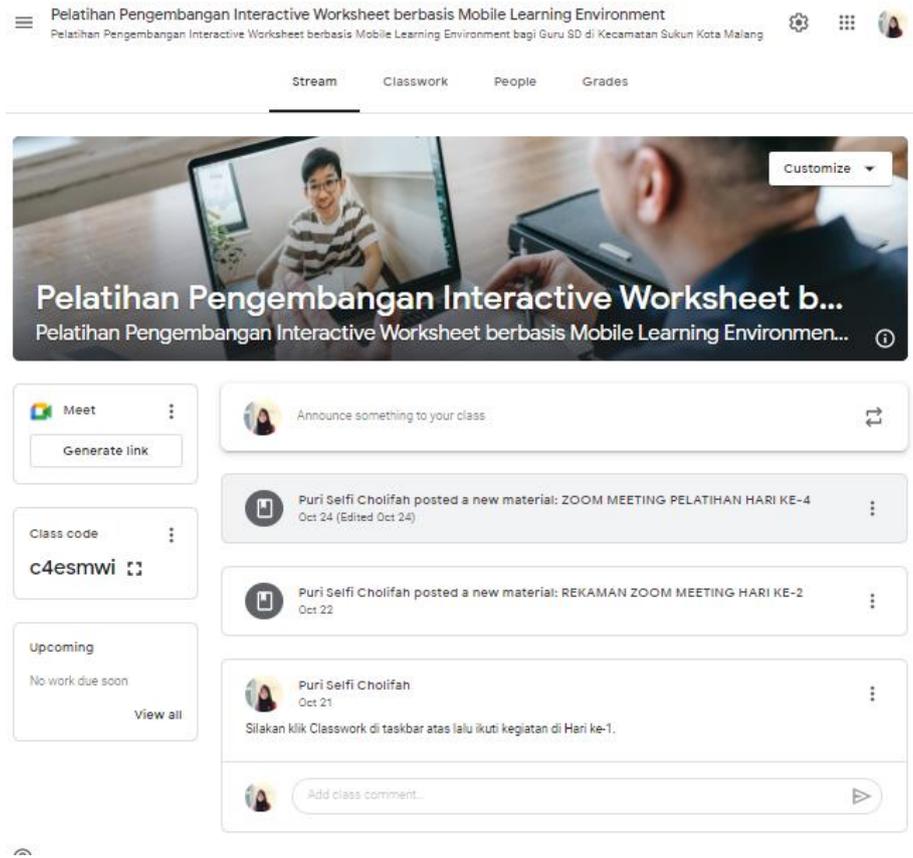


Figure 1 Google Classroom Interface

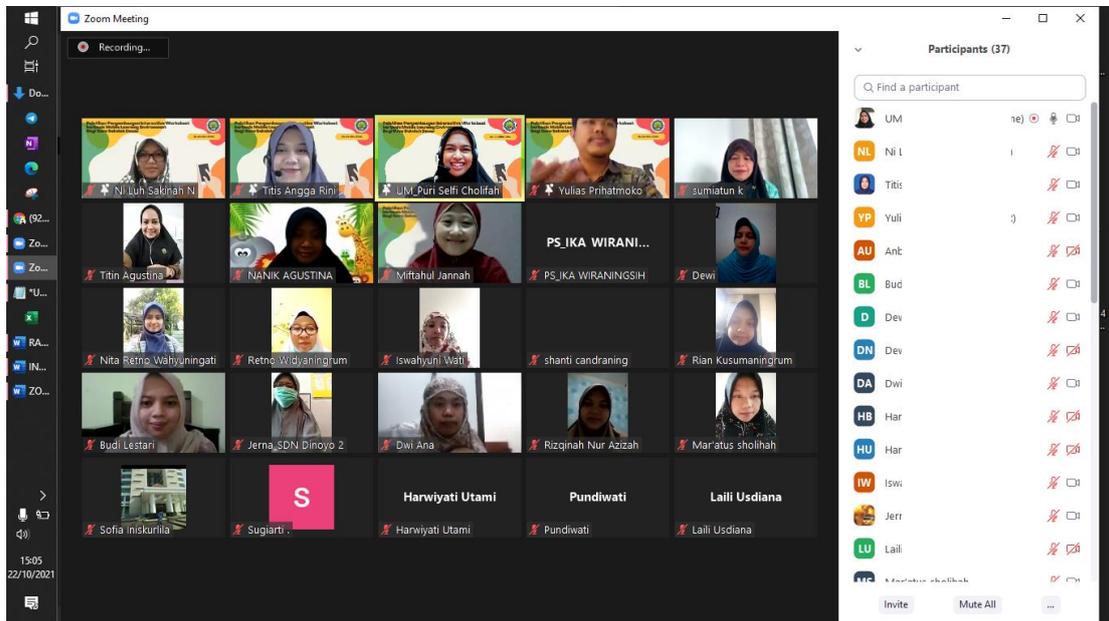


Figure 2 Synchronous Meeting at Day Two Using Zoom

Based on data from the tasks collected as many as 10 participants did not return the task so that the percentage of completion was 79%. This indicates that participants' involvement decreased significantly related to the initial task given. In the zoom meeting monitoring only, a few participants were not present. A common obstacle that teachers face in the completion of training tasks is the

time to complete the task. This is in line with the general constraints of online training activities for teachers ([20], [21]).

In the activity on the third day is done asynchronously, namely the completion of the design to be applied into an interactive worksheet using EdForm.

This became Kendal also as many as 25 participants who collected the task and there were an additional 6 participants who did not continue collecting the second task.

Related to the given task, the workmanship of a good task by one of the participants that shows the display interactivity of the developed worksheet. The material presented by participants is related to the planet, even peseta also adds additional sources in the form of YouTube links that can be played directly by students.

In the fourth part, the result of the number of participants who collect the final task shows that when the participant has carried out a submission on the previous day's activity it will be very easy for participants to proceed to the next activity. On the fourth day, there is also a zoom meeting to present their works as well as closing training activities.

In general, participants have shown an understanding of the material presented and how the material can be applied to learning in their respective classes. This is in line with the innovative and professional elements of teachers where a license must give meaning to the participants [22], [23]. Moreover, teachers know that the role of the worksheet in its relationship to improving critical thinking skills must be supported by the development of appropriate worksheets [24], [25]. Related to the results of participants' grades in general, participants showed that if the instructions were met, the value limit would be met, and because the participants were teachers who had been certified, they had shown quality in the design and development of worksheets.

5. CONCLUSION

The training conducted has successfully provided a professional development scheme to teachers in Malang City, especially related to the Development of Interactive Worksheet Based on Mobile Learning Environment. This implementation involves teachers in the city of Malang who are netted online through the Google Form registration page. From the initial distribution results, as many as 39 teachers are willing to follow the activity. Overall, the level of ability from the first day was 100%, while the second day reached 79% and the third and fourth days by 64%. In general, almost all participants are cooperative when carrying out synchronic activities through zoom meetings. The main obstacle is the completion of the task. The next suggestion for developing devotion is expected to clarify instruction for teachers related to the task and provide time and remedial tasks for participants who have not successfully completed the task well.

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