Development of E-Module for Online Training Minimum Competency Assessment for Elementary School Teacher

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ABSTRACT

Online training is widely carried out to improve the professional competence of teachers. The results of the needs analysis show that optimizing online training requires materials that can help participants learn independently and more deeply, namely with e-modules. The e-module development procedure is carried out using the ADDIE model which has five practical stages for product development. This includes expert validation, testing, and user assessment of the developed product. Data in product development was explored using questionnaires and field notes, each of which analyzed the results in a quantitative and qualitative descriptive manner. The results show that the e-module for online training for minimum competency assessment in elementary schools has been successfully carried out. The module has five main sections that contain deepening of the material and practice of preparing a minimum competency assessment instrument. From the results of validation and user ratings, the product reached the criteria for use after passing several sections for revision.

Keywords: E-module, Online Training, Elementary Teacher Student, Minimum Competency Assessment.

1. INTRODUCTION

During the pandemic, various training activities that were usually carried out face-to-face have now turned to online training through various media [1]. This is one of the positive impacts of the pandemic itself which has instantaneously digitized learning in Indonesia compared to before [2], [3]. Online training itself is carried out in various fields, for example for the continuous professional development of teachers or in Indonesian terms known as PKB. Teachers themselves are required to always improve their competence, one of which is through training held by educational institutions [4].

Universitas Negeri Malang as one of the universities that has a teacher education study program is committed to carrying out training activities, workshops, and other activities in the community service scheme. One of them is about minimum competency assessment training which is abbreviated as AKM in the Indonesian acronym as a new policy in learning assessment that replaces the previous national exam. Regarding this training, a needs analysis was carried out to optimize online training for participants. The needs analysis was carried out through an online questionnaire in May 2021.

The results of the needs analysis showed that according to participants the main challenge in online training was the limited time in interacting with resource persons. This limitation is because most of the participants are also carrying out other activities during the training, such as teaching in their class or conjunction with other activities. Another need is also in the material that is generally distributed from the presentation slides of the resource persons so that it is not comprehensive enough to be studied, especially regarding the guidelines for the expected training outcomes.

Based on the results of this needs analysis, the development of an e-module for online training is the right solution choice to do. Much has been discussed about the advantages of the module itself which is used as independent study material, starting from understanding concepts, practice questions, and various activities that can be used as a guide in learning [5], [6]. Moreover, the form of the module itself can be electronic in various varied formats. This is why in online training

or courses many modules are developed to streamline learning processes and outcomes [7]–[9]. The use of this module can help participants to better understand the content and demands an awareness of independent learning from its users.

2. METHOD

The e-module development is carried out using the ADDIE model which has five systematic steps for product development. Product development is carried out from February to August 2021. The research data collected was mainly collected by using a questionnaire to determine the product criteria and supported by field notes to determine the use of the product during online training. Specifically, for the questionnaire, the instrument grid is described in Table 1.

Data analysis was carried out using a quantitative descriptive technique with Formula 1. The results of the calculation of the data are then classified according to the criteria in Table 2. Data analysis was also carried out using a qualitative descriptive technique to describe the data from field notes. The procedure for the research itself consists of five stages which are taken during the research and are described below.

Table 1. Questionnaire Instrument Grid

Indikator	Descriptor	
1. Content	1.1	The module discusses the minimum competency assessment for primary schools
	1.2	The module discusses literacy assessment in elementary schools
	1.3	The module discusses numeracy assessment in elementary school
	1.4	The module provides practice for the practice of minimum competency assessment in primary schools
2. Presentation	2.1	Modules are presented systematically starting from the presentation of the material at the beginning to the end
	2.2	Modules are presented in font size, spacing, and color selection that are clear to read
	2.3	Modules are presented with relevant illustrations relating to the assessment of minimum competencies in primary schools
3. Practicality	3.1	The module can be operated easily (accompanied by the user manual)
	3.2	Modules can be opened and accessed on PC or mobile devices
	3.3	The module can be opened smoothly and the file size is appropriate
	3.4	(not too big or loading when opened)
4. Feasibility	4.1	Modules are presented in standard language and use effective sentences
	4.2	Modules are presented by paying attention to sentence and paragraph grammar
	4.3	Modules are presented with attention to punctuation

Table 2. Product Quality Criteria

Percentage Scale	Criteria
85-100	very decent, no revision
75-84	decent, minor revision
56-74	decent enough, minor revision
≤55	undecent, total revision

$$P = \frac{F}{N} \text{ x } 100\% \qquad (1)$$

Information
Q: final score in percentage
F: frequency of scoring
N: max score

2.1. Analysis

At this stage, a needs analysis related to the product developed is carried out. At this stage, the target users of the product are also determined, namely elementary school teachers who will take part in online training in the preparation of the AKM instrument in elementary schools. After determining the target user, at this stage, the format, content, and presentation of the module are also determined to suit its development objectives.

2.2. Design

From the provisions in the previous stage, at this stage, an electronic module design was developed starting from the module framework, reference selection, illustrations, cover designs, and practice questions.

2.3. Develop

At this stage, the module framework is developed into a product to fit the predetermined grid. This stage involves a development team from Elementary School Teacher Education lecturers and graphic design experts for module layouts. This stage is taken the longest compared to other stages (April-June 2021).

2.4. Implement

From the e-modules that have been successfully developed, before being applied in training, the product is validated first by an assessment expert in elementary schools. From the results of expert assessments, the product goes through a revision process until the appropriate criteria are obtained and used when online training is carried out. During the training, the results of using the product were observed to determine its applicability and assessed by participants for suitability, presentation, practicality, and linguistics as well as expert validation considering that the users are teachers in positions who have had experience in assessment in elementary schools.

2.5. Evaluate

The final stage in this research is carried out by evaluating the results of product development as a whole, especially for product improvement. From this stage, the results of product development as a whole will also be known for reporting the results from start to finish according to the formulated research objectives.

3. RESULT AND DISCUSSION

3.1. Product Description

An e-module has been successfully developed specifically to facilitate participants during the online training on minimum competency assessment. The e-module consists of 35 pages that discuss (a) national assessments, (b) minimum competency assessments, (c) literacy assessments for elementary schools, (d) numeracy assessments in elementary schools, and (e) minimum competency assessment practices. in learning. The module is also equipped with pretest and posttest for participants as well as analysis of AKM questions and exercises for preparing the instrument in the literacy assessment and numeracy assessment sections as the main part of the module.

This is indeed a characteristic of the module itself, which in addition to containing a description of the material also contains exercises that are based on personal learning activities [10]. The practice itself refers to the stages of material that must be mastered by its users so that in the end it is mastered by all materials comprehensively [11]. The following is a display of the developed module.

Figure 1. Display e-module for literacy assessment

In Figures 1 and 2, it can be seen the content in the e-module has been designed in such a way as to make participants can practice independently. Module developed from ppt. which is then converted into a pdf format. files to make it easier for participants to access from a PC or mobile considering the limitations of supporting devices or applications on the participant's device, which are teachers in the office.

Indeed, in education in Indonesia itself, the majority of digitalization of learning is still in the adaptation stage, although indeed in certain communities the use of technology can be very sophisticated and capable [3], [12]. This condition is also a challenge in online training so that their implementation continues to run effectively, such as with the development of simpler e-modules.
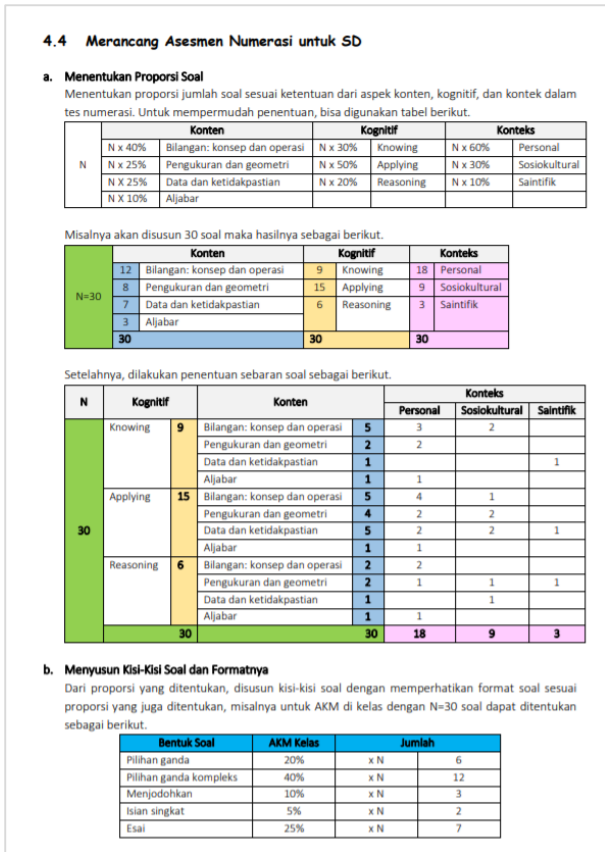
Figure 2. Display of e-module for numeracy assessment

3.2. Product Usage Trial

3.2.1. Expert Validation

According to the product development stage, before being used in AKM training activities for elementary school teachers, the product was first validated by experts with the results in Figure 3. After two validation and revision processes, the validation results obtained that from (a) the suitability of the product content reached the criteria feasible, (b) the presentation of the product reaches the very feasible criteria, (c) the practicality of the product reaches the appropriate criteria, and (d) the language reaches the very feasible criteria.

Expert validation has an important role in determining product quality to be precise in its content, presentation, use, and readability [13]. Especially experts in the field of learning assessment in the diagnostic and formative assessment sub-topics because the concept of the AKM itself is intended for both [14]. AKM as a new concept in assessment certainly requires a good dissemination process to education practitioners, for example, elementary school teachers who will be involved in online training about AKM in elementary schools [15]. This condition was also conveyed by the validator during the validation process to make improvements to the addition of explanations about the concepts of minimum competency assessment, literacy,

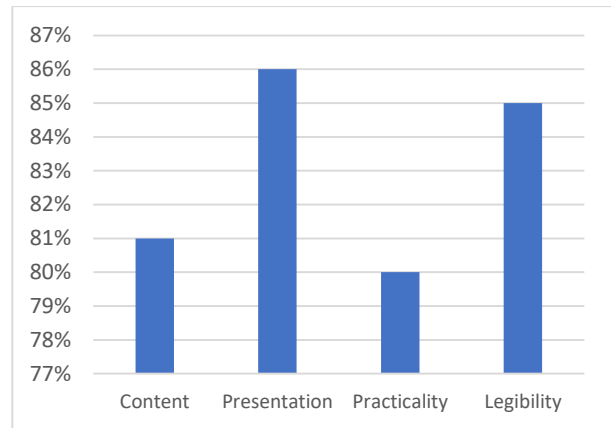and numeracy which were previously only limited to concepts, now with examples of their application.

Figure 3. Expert validation results

3.2.2. User Test

Referring to the improvements and product validation results that show the criteria for use, the product is used during online training. At the beginning of the training, participants took a pretest on the e-module on minimum competency assessment in elementary schools. After that, participants were given an in-depth study of the material in chapters 1 and 2 of the e-module on the concept of a general national assessment and minimum competency assessment in depth, starting from the differences between the national exams, the proportions, or test standards, to the implementation procedures. After exploring the material independently, the second meeting was held synchronously online to strengthen material on national assessments and AKM. The training pattern is indeed carried out with a flipped classroom so that the use of modules is very helpful in its implementation [16].

At the third meeting, the material on literacy and numeracy assessment was carried out independently at the beginning meeting in chapters 3 and 4 in the e-module. Then reinforcement was given at the fourth online synchronous meeting. It was only at the fifth and sixth meetings that the practical section on the preparation of minimum competency assessment instruments in product-oriented e-modules was discussed in the form of a collection of literacy and numeracy test instruments for elementary schools. From the use of this e-module, participants were asked to assess with the following results.

In Figure 4, it can be observed that (a) the suitability of the content according to the participants is considered feasible, (b) the presentation of the e-module is considered feasible, (c) the practicality of the e-module is considered feasible, and (d) its readability is considered feasible. From this assessment, it can be concluded that the module is actually feasible to use during online training according to the participants, but to complete the

data, data in the form of criticism and suggestions from participants is also extracted, here are some quotes.

"Modules provide more examples of questions and easy steps for making"

"The module is good, only to master the material takes a long time because AKM itself is still new, it is better if it is printed out so that it is easier to use for learning"
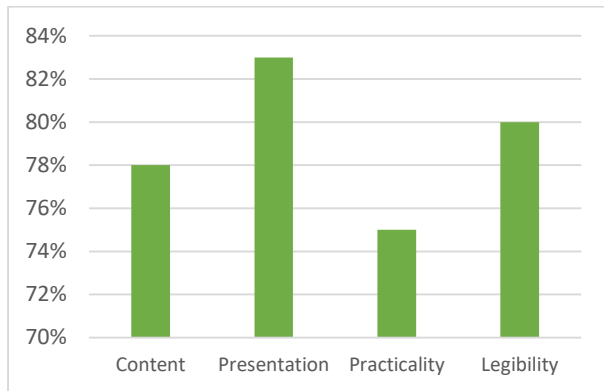

Figure 4. User rating results

As discussed earlier, the use of the e-module itself is indeed easier for teachers who have technology skills, but for teachers who do not use the e-module in pdf format. still considered difficult. This fact is also an additional finding in the development of this e-module about how the technological capabilities of teachers in elementary schools are not all qualified. This is also reinforced by the results of previous studies that the use of technology in learning for teachers needs to be trained a lot [17]–[19]. For this reason, the use of the developed e-module is also an added value to provide participants with experience in using technology [20].

The advantages of the e-module developed include (a) as a learning guide for participants during the online training which of course limits interaction with the facilitator, (b) presenting material in an organized manner starting from deepening the material to practice so that it is suitable for personal learning, and (c) With its simple format, the e-module can be used on a PC or mobile easily. the weaknesses of the developed e-module include requiring a device to open it because it is in the form of a soft file both PC and mobile as well as its operation and requires good learning awareness from participants to want to explore and follow the exercises in it.

4. CONCLUSION

The development of an e-module for online training on minimum competency assessment for elementary school teachers has been successfully carried out. From the results of expert validation, the product reached the appropriate criteria with a one-time revision to the addition of material descriptions and sample questions. From the results of the product application, it is shown that the e-module can be used during online training and helps participants to systematically deepen the material from basic concepts to the practice of preparing minimum competency assessment instruments. Ratings from users, namely elementary school teachers participating in online training also stated that the product was eligible for use during the training although its use still had weaknesses and strengths. During implementation, the development of this e-module can also provide participants with experience in using digital materials for learning. Based on the results of this research, product development in a similar or other format is still needed, especially for online training.

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