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The development of a micro-teaching module for online learning

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ABSTRACT

The purpose of this research was to develop a module of micro teaching-based technology for online learning for students at STKIP Muhammadiyah Muara Bungo and to analyze the module's validation and appropriateness for online learning. The development procedures for this research utilized a 4-D model (Define, Design, Develop, and Disseminate), as demonstrated by the validation analysis conducted with learning material experts, learning media experts, and students. The average score for all aspects combined is 82.6. It demonstrates an excellent category. This means that the microteaching module in online learning serves as instructional material for improving teaching ability through the use of technology. The microteaching online learning module is valid and appropriate for use.

Introduction

Education currently has the challenge to improve the competency in the industrial revolution 4.0. The use of technology increases in this era. Education is expected to be able to improve the quality, the access expansion and relevance. The teacher must be able to create the innovation in teaching. Technology trend demand teacher and student must be able to adapt the teaching and learning style in this era. Therefore, the pandemic of covid 19 is caused the online system for teaching and learning activity. The impact of this situation is the acceleration of the education facility in teaching and learning activity to give the ease of students' access in online learning. This is also attempted by STKIP Muhammadiiyah Muara Bungo to ensure all the activity run well, and minimalize the problem.

The learning process in STKIP Muhammadiyah Muara Bungo is still changing depend on the urgency of the current situation. Online learning is the right choice for this pandemic situation. The students have the online class via zoom meeting. In the implementation, the online system has the problem, especially in practical course. One of the practical courses which get the problem is micro teaching course. Micro teaching course is the practical course which assessing students' performance in practicing teaching skill. Microteaching is a teacher training technique for learning teaching skills. It employs real teaching situation for developing skills and helps to get deeper knowledge regarding the art of teaching (Remesh, 2013).

In STKIP Muhammadiyah Muara Bungo, micro teaching course has 3 credit which followed by the students of six *semester*. In pandemic situation, the students only send the video of the teaching performance at home. Based on the assessment of that activity, the students only create the video of learning not video in teaching and learning process. Micro teaching is a real teaching but in small scale that has the purpose to equip and practice the teaching skill for the students (Asmuni, 2001). The case in STKIP Muhammadiyah Muara Bungo, the students could not show the technical of teaching skill yet.

There are eight skills of teaching that students have to master in micro teaching course. They are the opening and closing learning skill, the learning explanation skill, the use of learning variation skill, asking the question skill, giving the reinforcement skill, the class management skill, teaching small group or individual skill, leading the discussion in small group skill (Science, 2010) . the researcher analyzed that the students' performance is not optimal if they just send the learning video, because it doesn't present the teaching skill. The quality of micro teaching video is still not good. It is caused there is no module as guidance for the students to do micro teaching online via zoom meeting.

The module would design as a guidance in micro teaching online to make students learning by themselves at home. A module is a learning teaching material which the content is relatively short and specific that arranged to

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achieve learning objectives (Harta et al., 2014). The development of this module is very important to do in helping students to learn independently in making interesting micro teaching videos by utilizing advanced technology for online learning.

Based on the explanation of these problems, this research aims to developing a technology-based micro teaching module in online learning for the students of STKIP Muhammadiyah Muara Bungo, and analyze the validation of technology-based micro teaching modules in online learning. Online learning is the new trend in this era that demand all of education aspects need technology. In micro teaching course, technology can be used to help the continuity program in pandemic era. The students design the video as learning material that is presented in online class by the popular platform such as skype, zoom, or google meet. Videos in teacher education in particular can be powerful tools in enhancing professional development as videos can be used in several ways in teacher education and training programs(Savas, 2012). The micro teaching module for online learning provides the step to create the interesting video as learning material in online learning. it helps the students to conducted the online learning.

Literature review

Micro teaching

Micro teaching is a compulsory subject for students majoring in education and teacher training. This course is a provision for students before carrying out field practice at school. Micro teaching is actually also real teaching but in a mini form (small scale) which is intended as one of the approaches used to train, equip and improve teaching skills (Asmuni, 2001). Therefore, micro teaching as an approach to equipping students to become professional teachers is very important to implement. There are several elements in micro teaching (Sukirman, 2012), as follow:

1. The training process which developed in the micro teaching approach in the classroom, laboratory or special place that designed for micro teaching and making lesson plan,
2. Simplified learning exercise activities. This simplification is carried out in each element or component of learning,
3. The exercises which developed in microteaching are only focused on specific types of skills specifically, according to what each practitioner wants or based on the suggestions that given by the supervisor,
4. The micro approach is more directed at the increasing control over each type of skill being trained,
5. The training process in micro teaching to the related people will get invaluable input to improve the process of preparing, coaching and improving the teaching profession.

Micro teaching is a place for students to practice teaching skills. There are several teaching skills that students need to master: 1) opening and closing learning skills; 2) skills in delivering learning materials; 3) questioning skills; 4) skills in mastering a variety of learning methods; 5) skills to provide reinforcement, reward and punishment; and 6) classroom management skills. These are all basic skills for a teacher. Micro teaching has strong characteristics. there are several characteristics of micro teaching (Helmiati, 2013), namely: The number of students ranged from 5–10 people; Teaching time is limited about 10-15 minutes; The exercises which focus on basic teaching skills. Based on a practical point of view, prospective teachers will learn how to do learning, while friends who become students will be able to observe how their friends' teaching styles are and can assess whether or not the basic learning skills are being carried out, such as the use of learning methods and strategies, the use of learning media, assessment, etc. It is hoped that learning can be recorded so that the recording results can be used as material for discussion between teachers/prospective teachers to be corrected and given input (feedback) in order to improve the shortcomings of the practitioner.

Online learning

In the era of the industrial revolution 4.0, the learning process is required to be able to use technology. In addition, during the COVID-19 pandemic, face-to-face learning was abolished and shifted to online learning. online learning requires several requirements for students (Riyana, 2007), namely:

1. ICT literacy: students must have basic ICT skills as a tool for learning.
2. Independence: online learning requires the condition of students who are accustomed to independent learning, namely utilizing online learning facilities to study material, take quizzes and practice mastering competencies without having to be guided directly by the teacher.

3. Creativity and Critical Thinking: online learning facilities are very diverse, students can learn various available tools such as browsing, chatting, group discussions, video conferencing, online quizzes, online drills and others, this requires students' creativity to take advantage of everything optimally.

The internet can be used in learning settings because it has distinctive characteristics (Hardjito et al., 2002), namely:

1. As an interpersonal media and also as a mass media that allows "one-to-one" or "one-to-many".
2. Has an interactive.
3. Allows the occurrence of synchronous communication (synchronous) or delayed communication (asynchronous), thus enabling the implementation of a learning process.

Online learning is often called an online class (virtual classroom). In order to become a place for an effective and interactive teaching and learning process, online classes must consider several aspects, namely: the availability of learning resources and easy access for students; create a conducive environment for learning, such as an adequate internet network so that the teaching and learning process can run well.

The development of module

The module is one of the learning media. The learning module is the smallest unit of teaching and learning programs, which are studied by students themselves individually or instructional (Winkel, 2009). Therefore, teachers must be able to design and develop modules for the renewal of knowledge. The 4D development model of Thiagarajan consists of four stages, namely defining, designing, developing and disseminating (Sembiring et al., 2019).

1. Define step;
    This stage consists of five steps, namely: 1) Preliminary Analysis, 2) Student Analysis, 3) Task Analysis, 4) Concept Analysis, 5) Specification of Learning Objectives.
2. Design step;
    Activities carried out at this stage include: preparation of tests (Constructing Criterion-Referenced Tests), selection of learning media (Media Selection), selection of formats (Format Selection), and initial design of learning devices (Initial Design).
3. Develop step;
    Activities carried out at this stage are expert validation and try out.
4. Disseminate step;
    Researcher is at the distributing stage.

Methods

This research was research and development (R & D). the development procedure used 4-D model by the following steps: Define, Design, Development, and Disseminate. In define step, the researcher distributed the need analysis questionnaire. In design step, the researcher did for activities, they are the development of module matrix, the media online choice, the format choice, and the design of the module draft. In development step, the researcher developed the module, experts' validation, and small-scale trial. In disseminate step, the researcher did large- scale trial.

The experts' validation test involved four validator, two experts as learning material validators who assessed the validity of content, and language. Meanwhile, two experts as validators of learning media assessed the validity of presentation and graphics.

Participants

Small-scale trial was conducted to obtain direct input on the technology-based micro teaching module. The subject of small–scale trial involved 5 students of STKIP Muhammadiyah. The large–scale trial used cluster random sampling. The total subject of large–scale trial are 35 students. It aimed to gather more input for the perfection of the module.

Instrument

The instrument of gathering data used questionnaire and validation sheet. Validation sheet was used for the requirement of expert validation. The experts consist of learning material experts and learning media experts.

The validation sheet of learning material experts had three aspects of assessment, they were content validity aspect, presentation validity aspect, and language used validity aspect. it had 44 items. The validation sheet of learning media experts consists of module size validity aspect, cover design validity aspect, and content design validity aspect. it had 31 items.

The questionnaire was distributed for students. It had three aspects. They are module content aspects, cover design aspects, and presentation of the module aspects. The questionnaire consists of 25 items.

Data analysis

The data from the questionnaire sheets and validation sheets analyzed using descriptive statistics to obtain the average value and the percentage of results as follows (Syahrum & Salim, 2012).

$$P = \frac{\sum F}{N} \; x \; 100\%$$

Information
  P: Percentage
  F: The frequency of the answer
  N: Total statements

To assess the validity of the module according to the validity results of the experts, the model adapted (Syahrum & Salim, 2012):

Table 1. Validity results

Interval	Category
0-20	Very invalid
21-40	Invalid
41-60	Valid Enough
61-80	Valid
81-100	Very Valid

Results

Mastery of teaching skills in online classes must be possessed by each pre–service teacher, considering that currently digitalization has entered all aspects of life, including in educational system. As an effort to prepare pre - service teachers who must ready to teach in this digitalization era, mentoring is needed from an early age, starting when the student takes micro teaching courses. Students must be prepared how to deal for online learning. For this reason, the existence of an online micro teaching module is needed. Modules are teaching materials that students can use to study independently. For this reason, the micro teaching module for online learning provides steps to create interesting teaching media as learning materials in online learning. This module is intended to be a guide for students to be able to learn independently in developing interesting and meaningful learning media so that students' creativity is needed in designing them.

The stages of developing the online micro teaching module had been carried out in various stages of expert validation and try out. The results of expert validation showed that the online micro teaching module was in a valid category, so it can be continued to be tested by applying it in learning. The try out was carried out twice, namely a small-scale try out and a large-scale try out. The difference was in the number of respondents used. The results of the large-scale try out showed that the micro teaching online module is categorized as very valid, where each indicator of module content validity, language use, and module display gets an average score of 82.6. it meant that the benefits of this module could really has benefit by students. The module content presented was indeed very closely related to the concept of micro teaching, basic teaching skills, to the stages of resistance in making learning media. In addition, with the use of clear language, easy to understand, and supported by image at each stage of making learning media. This module makes it easier for students to follow each stage in preparing learning media for online learning. It could be concluded that the microteaching online module is very feasible and can be used as a guidebook for implementing micro teaching in online learning.

The existence of this online micro teaching module is expected to be a reference, especially for pre-service teacher in teaching online class. We need to understand together that online learning is not only due to the Covid-19 pandemic, but more than that, this era is already at the stage of the digitalization era, so the learning system in schools must also be able to facilitate students to learn online. so that students can access information quickly, get various material references, and feel the sophistication of technology. Thus, it is hoped that students' insight will develop further, creative thinking and work.

Discussion

This research was developed micro teaching module- based technology to help the students for enriching the strategy in practicing teaching in online learning. The module consists the concept of micro teaching, the basic skills of teaching, the implementation micro teaching online, and the evaluation of micro teaching online. In developing the module, the researcher used 4 D–model (define, design, development, and disseminate).

Define

The researcher distributed the need analysis questionnaire. The result of need analysis questionnaire showed that:

1) In COVID-19 pandemic era, micro teaching class could not be implemented effectively.
2) The students had the difficulties to join the micro teaching in online learning.
3) The students' ability to design online learning material in teaching practice is low.
4) The micro teaching module as a guide of students to practice teaching was only for offline learning, so the students did not have the module that guide them in online learning for this era.

Based on this result, the researcher decided to design the module for micro teaching online. It is hoped that this module can solve problems and fulfill the students' need in online learning for micro teaching class.

Design

There were four steps in designing the module, the development of module matrix, the media online choice, the format choice, and the design of the module draft.

1) *The development of module matrix*

   In this stage, the researcher decided to create the outline of the indicators that had described about the micro teaching online module.

2) *The media online choice*

   In this stage, the researcher decided the media and the application that would be used. Educational software and applications have grown more "adaptive," relying on technology and algorithms to determine not only what a student knows, but what his or her learning process (Ünlü, 2016). The application which chosen was zoom as platform for micro teaching class. The module would be designed by interesting slide show media to improve students' teaching skill in online learning.

3) *The format choice*

   In this step, the researcher decided the module would be presented as a guidance book in micro teaching online class. There are six characteristics of module. They are self-instructional, self-contained, stand alone, adaptive, use friendly, and consistent (S.Sirate & Ramadhana, 2017).

4) *The design of module draft*

   In this step, the researcher compiled the outline of micro teaching online module into some chapters.

Development

There were three activities in the development steps, they were module development, experts' validation, and small-scale trial.

The module development

The module was developed into four chapter. Chapter one consists of the basic concept of micro teaching. Chapter two consists of the basic teaching skills. Chapter three consists of the implementation of micro teaching online. Chapter four consists of the evaluation technic of micro teaching online.

The experts' validation

1. The validity result of learning material experts

There were two experts who test the validity of learning material in module micro teaching for online learning. The result showed in Table 2.

Table 2. The result of learning material experts' validation

Indicator	Average Score of experts	Category
Validity of module content	82.7	Very Valid
Presentation validity	79.6	Valid
Language used in module	79.6	Valid
Total of average score	**80.6**	**Valid**

Table 2 showed the validity test from the learning material experts was valid. There were three indicators, they are validity of module content, presentation validity, and language used in module. The average score of validity of module content was 82.7. The average score of presentation validity was 79.6. The average score of language used in module was 79.6. the total of average score was 80.6. it meant that the learning material of micro teaching for online learning module was valid.

The validity result of learning media experts

There were two experts who test the validity of learning media. The result showed in Table 3.

Table 3. The result of learning media experts' validation

Indicator	Average Score of Experts	Category
Module size	76.5	Valid
Cover design	79	Valid
Content Design	79.5	Valid
Total of average score	**78.3**	**Valid**

Table 3 showed that the validity test from the learning media experts was valid. There were three indicators that were tested. The indicators were module size, cover design, and content design. The average score of module size was 76.5. the average score of cover design was 79. The average score of content design was 79.5. the total of average score was 78.3. it indicated that the micro teaching module for online learning was valid.

2. Small Group Trial

Small-scale trial was conducted to obtain direct input on the technology-based micro teaching module. The subject of small–scale trial involved 5 students of STKIP Muhammadiyah. The result of small group trial showed in Table 4.

Table 4. The result of small group trial

Indicator	Average Score	Category
Module contents	80	Valid
Use of language	78	Valid
Presentation of the module	75	Valid
Total of average score	**77.6**	**Valid**

Table 4 showed the result of small group trial. There three indicators that were tested in small group trial. They are module content, use of language, and presentation of the module. The average score of module content was 80. The average score of use of language was 78. The average score of presentation of the module was 75. The total of average score of small group trial was 77.6. it indicated that the module was valid.

Disseminate

In this disseminate step, the researcher conducted large group trial. The total subject of large–scale trial are 35 students. The result of tried out showed in Table 5.

Table 5. The result of large group trial

Indicator	Average Score	Category
Module contents	85	Very Valid
Use of language	82	Very Valid
Presentation of the module	81	Very Valid
Total of average score	**82.6**	**Very Valid**

Table 5 showed the result of large group trial. There were three indicators that were tested. The average score of module content was 85. The average score of use of language was 82. The average score of presentation of the module was 81. The total of average score of large group trial was 82.6. it showed that the result of the module in large group scale was valid. In conclusion, the micro teaching online module validation could show in Fig 1.
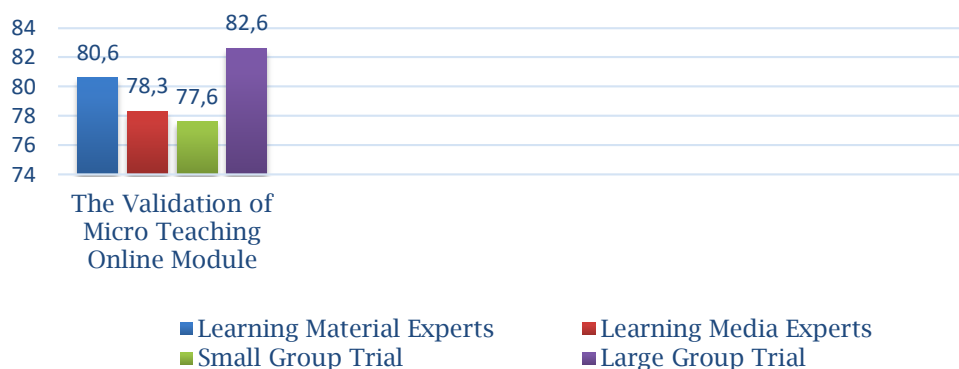

Figure 1. The result of validation diagram

Figure 1 showed all the aspects that were tested in conducted the validation of the module. The validity score of learning material experts was 80.6. The validity score of learning media experts was 78.3. The score of small group trial was 77.6. The score of large group trial was 82.6. it showed that the micro teaching module for online learning was valid (Vendramin et al., 2013).

Conclusion

The research concluded that the micro teaching module could be used as a manual for microteaching online classes. It met the educational requirements of the digital era. This module is designed to assist students and lecturers in developing their ability to teach and learn more effectively. Future research has the potential to examine the module's effectiveness on a large scale. This research could be expanded to encompass other areas of technology and online learning, most notably the development of online learning media.

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