THE DEVELOPMENT OF MOOC LEARNING MODELS TO IMPROVE TEACHER PROFESSIONALISM

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Abstract

Education in the 21st century emphasizes the quality of professional teachers who aim to create superior students for better education. A qualified teacher must have four competencies: pedagogic, personality, professional, and social. There are several ways to improve teacher professionalism, such as studying learning models and applying them in the classroom. One practical way to learn learning models is through MOOCs. Learning models are usually organized based on various principles or theories of learning as a foundation for its development. Learning models can be used as a pattern of choice to effectively and efficiently achieve learning objectives. The type of MOOCs developed is xMOOC using the ADDIE Model in studying Learning Models that teachers can apply. These MOOCs consist of seven learning model materials to improve teacher professionalism, namely (1) basic concepts of learning models, (2) contextual learning models, (3) cooperative learning models, (4) problem-based learning models, (5) thematic learning models, (6) distance learning models, and (7) independent learning models. The development of MOOCs opens a wide opportunity to be used as an open and massive learning *platform* to develop a teacher's competence in creating quality learning.

Keywords: Learning model, MOOCs, teacher professionalism.

1 INTRODUCTION

Education in the 21st century emphasizes the quality of professional teachers who aim to create excellent students and better quality education. (Bae et al., 2022; Hofmann, 2019). To build their professionalism, every teacher must continue to learn and develop in their profession. Providing equal opportunities for personal competence and professional development is an important factor in improving the ability and quality of a teacher (Svendsen, 2020). Teacher professional development contributes to improving teachers' knowledge and abilities and changes in attitudes and beliefs so that they are following their profession.

Professional teachers are the determining factor for the success of quality education. The low quality of education today indicates the need for professional teachers. Therefore, teachers are expected not only to carry out their profession but must also have a strong *interest in* carrying out their duties according to the required rules of teacher professionalism. The ability of

teachers to design, implement and evaluate all series of learning processes is very important because teachers are the spearhead in improving the quality of education. The ability to design, implement, and evaluate all series of learning processes is the main task of a professional teacher. (Marsin, 2022). Baso's research supports this research, which explains that the key to success in the teaching and learning process lies in the teacher's ability to deliver the learning material provided (Baso, 2015).

Professional teachers in the teaching-learning process can create a good and conducive learning climate. Teachers need to make various preparations and select learning tools in the learning process so that students can understand the material easily, learning is fun, and students are active and interactive. For this reason, teachers must choose a variety of innovative learning strategies, methods, and models that can meet the needs of students. (Uno, 2008).

High professionalism will appear in the desire of a teacher to constantly improve and maintain his attitude and behavior as a manifestation of his professionalism. Khorasgani (2019) proposed the characteristics of teacher professionalism, namely (1) understanding of duties and acceptance, (2) willingness to work effectively with students, teachers, parents, and the community, and (3) ability to develop self-potential. More specifically, according to Welker (1992), teacher professionalism can be identified if the teacher is an expert in carrying out their duties and developing themselves. According to Ekinci & Acar (2019), when evaluating a teacher's professionalism, it is important to consider factors such as ability to perform tasks, commitment and accountability, and independence.

Joyce & Weil (in Suyanto et al., 2013) states that a learning model is a plan or pattern that can be used to design face-to-face meetings in the classroom or additional learning outside the classroom and to organize learning materials. A learning model can also mean a teaching plan that shows a certain "learning pattern ."The appearance of activities carried out by teachers, students, and teaching materials can create systematic student learning. In line with this opinion (Winata in Suyanto et al., 2013) defines the learning model as a conceptual framework that describes systematic procedures in organizing learning experiences to achieve learning objectives and serves as a guide for learning designers and teachers in planning and implementing teaching and learning activities.

In a teaching method, there are usually stages or steps that are relatively fixed and must be carried out to present learning materials in sequence. Therefore, a teaching model can be considered a mini-theory that is mechanical in the sense that the teaching model runs well and consistently like a machine. The various learning models have common components. For example, each learning model begins by attracting students' attention and motivating them to engage in the learning process. Each learning model ends with the lesson's closing stage, which includes activities to summarize the lesson's main points carried out by students with teacher guidance. Each learning model requires a different management system and learning environment. (Sueni, 2019).

Nowadays, it has become a trend in the academic world in higher education to develop an open course that anyone can follow in a massive network. Universities have begun to open themselves as widely as possible for the general public to be able to have learning experiences and follow learning in universities through a system called *massive open online courses* or MOOCs. MOOCs are a massive, *online*, and open learning *platform* that is one of the forms of *distance learning* on a wider and more massive scale. (Pomerol, Epelboin, & Thoury, 2015). The need for academic materials and the potential of MOOCs that can be accessed by anyone openly and *massively* encourage the idea of developing *massive open online courses* that are useful for honing one's abilities or skills so that one can have the ability, experience, knowledge, and networking in the digital learning era.

In 2007, the government, through the Minister of National Education, issued (Regulation of the Minister of National Education) Permendiknas number 16 of 2017, stating that a teacher must have four competencies: pedagogical, personality, professional, and social. In carrying out their duties, teachers must have professional competencies and attitudes to be taught to students. Of the four competencies, teachers must prepare themselves in delivering learning materials, starting from lesson planning (preparation of lesson plans, tools, models used, and students' worksheet), implementation (the course of the learning process), and reflection (description at the time of the learning process) (Kristiawan, 2018). Professional teachers must be prepared for their presence with various good supporting facilities as an important organ in the nation's progress. The development of MOOCs is important because, through these MOOCS, participants will be given provisions to develop teacher competencies professionally. By participating in MOOCs *Learning Models to Improve Teacher Professionalism,* participants

will understand innovative and creative learning models to teach effectively to achieve learning objectives.

2 METHODOLOGY

The development model used in this development is the ADDIE model, one of the systematic learning design models. The choice of this model is based on the consideration that this model is developed systematically and based on the theoretical basis of learning design. The model is structured programmatically with a systematic sequence of activities to solve learning problems related to learning resources that follow the needs and characteristics of learners. The model consists of five steps: (1) *analy*sis, (2) *design, (*3) *development, (*4) *implementation,* and (5) *evaluation*. Research activities start *with analysis* which is the process of identifying problems in the place that is used as a research sample; *Design is the* stage of making the design media display to be developed and the media navigation flow; *Development* is the stage of making media following the media design at the design stage; *Implementation, the* real step to apply the learning media that has been made; *Evaluation* is the stage taken to evaluate the product that has been developed. (Tegeh & Kirna, 2010).

The MOOCs developed in this development research are *fully online* learning. Regarding interaction methods, the MOOCs will be developed using asynchronous communication methods with a learning approach like in the classroom (classroom-type design model) with (LMS). Pedagogically, there are two types of MOOCs, namely (1) cMOOC, where the core of learning is the interaction between the MOOC participants themselves, and (2) xMOOC, where the core of the learning process in it is the interaction between the learner and the learning material provided. The MOOCs developed in this study are xMOOC. The pedagogy of xMOOC is more structured with materials that have been prepared in advance by the MOOC developer. The learning material prepared in the LMS consists of eight sessions that will end with a competency test to get a certificate of completion if passed and a certificate of completion if the participant does not. The learning process in xMOOC is designed to follow the flow of the prepared materials, including video materials, and consists of assessments that are automatically graded by computer. In xMOOC, the learner will be passive because the teacher has designed everything with a learning process usually scheduled within a certain deadline. (Belawati, 2019).

This research also focused on the development and content of MOOCs using the *Learning Management System* (LMS). The learning structure is specifically designed by applying the *self-paced instruction* model that allows participants to manage their learning time according to their abilities. This research topic developed popular skills an educator needs, namely learning models. This research will be conducted in the following steps.

1. Conduct a needs analysis with experts.
2. Making material in the form of *a Powerpoint presentation* file consists of the material below. The material will be adjusted with concepts and theories according to the reference.
   A. Basic concepts of learning models,
   B. Contextual learning model,
   C. Cooperative learning model,
   D. Problem-based learning model,
   E. Thematic learning model,
   F. Distance learning model, and
   G. Self-directed learning model.
3. Making videos with graphic animation techniques so that the display seems current and interesting.
4. Making questions (discussion and formative tests) for each session
5. Creation of session introduction, material description, and summary of each session
6. Review by experts and students of the MOOCs materials that have been created.
7. Make revisions to the review results
8. Uploading materials to the UT MOOCs Learning Management System (LMS)
9. Create an IPR certificate for the video material

3 FINDINGS AND DISCUSSION

This research results *in Massive Open Online Courses* (MOOCs) entitled *Learning Models to Improve Teacher Professionalism*. The presence of MOOCs *Learning Models to Improve Teacher Professionalism is* an innovation that aims to improve the competence and professional attitude of professional teachers as an important organ in the nation's progress. The development of these MOOCs is important because it will be provided to participants to develop teacher competencies professionally. *The* steps in the development of these *MOOCs were* adapted from the ADDIE development model. The model consisted of five stages: *analysis*, *design, development, implementation*, and *evaluation*. The following is the explanation.

3.1 Analysis Stage

The analysis stage was conducted by interviewing material experts from lecturers/practitioners in the field of education so that the things and material needs that must exist in the MOOCs of *Learning Models to Improve Teacher Professionalism* can be identified. *The* interview was semi-structured about the respondents' experiences and insights related to learning models usually carried out in schools. The following is a needs analysis interview for developing MOOCs *Learning Models to Improve Teacher Professionalism*.

Based on interviews conducted with experts, most teachers need the ability to choose effective learning models. The models generally used are conventional and monotonous. It is certainly necessary for teachers to innovate in choosing existing learning models in order to motivate students to learn.

"Some teachers still choose conventional learning models. This is certainly very monotonous and learning becomes less effective. I think we need trainings or something like that so that teachers are able to innovate in choosing effective learning models. If the learning model can attract students to learn, student learning motivation increases and learning objectives can be achieved."

It is in line with previous research conducted by Khaatimah et al. (2017), which states that in terms of teaching skills, teachers are required to carry out learning activities in an interesting, effective, and efficient manner. However, teachers only use conventional learning models, which causes the learning process to be monotonous, and the learning outcomes obtained by students are relatively decreased. Meanwhile, as is known that learning models are very numerous and can be used as a driver of student interest in learning to obtain satisfactory learning outcomes.

The expert also mentioned that it is important for teachers to know the existing learning models. Thus, teachers can adjust the conditions with the right learning model to be implemented. Therefore, teachers need to know the characteristics of existing learning models.

Teachers need to know the learning models for teaching. Because each model has its characteristics, some are suitable for certain conditions, and some are not. Teachers must be able to adjust the learning model to the conditions in the field or classroom. This adjustment ability will be related to the professionalism of teachers in schools."

It is clear how important the relationship between teachers and learning models is. Besides being the creator of the right learning model for classroom learning, teachers can also act as implementers of the chosen model. To implement a learning model, teachers need to know the characteristics of each model. With that, the learning model will bring the expected changes from a lesson. Teachers need to adjust it to the conditions of students and schools, limited tools and materials owned, and things that are considered important. Teachers' knowledge of learning models is important so that by recognizing the characteristics of each model, a teacher can correlate it with learning conditions to produce changes as expected. (Widiyati, 2012).

According to expert testimony, the knowledge of learning models possessed by teachers/educators greatly affects the learning process. It is related to student motivation in learning. If the learning method is interesting, student motivation can increase.

"Knowing the learning models is certainly very influential on the learning process. Teachers can improve quality by applying a variety of suitable and interesting learning models in the classroom. As I said at the beginning, if learning is monotonous, student motivation definitely decreases, but if learning is interesting student motivation to learn can increase."

Several studies have proven that using diverse or varied methods in learning activities has improved the quality of learning. Research conducted by Muhammad Bustomi (2013) proved that the diversity or variation of the use of learning methods could improve the quality of learning English subjects in the environment of high school students. Another research conducted by Irna Puspitawati (2014) proved that learning with diverse methods proved effective in learning economic subjects in senior high school students. In addition to these two studies, Halim Gunardi (2014) proved that diverse learning models can increase student motivation to learn mathematics subjects. Halim Gunardi's research also proves that the continuous use of certain learning methods causes student motivation in learning activities to decrease.

The ability to study learning models for teachers can be provided directly without being tied to universities. Anyone can develop this ability at any anytime in order to establish coordination, collaboration, and synergy in the learning process to be effective so that learning objectives can be achieved. Therefore, MOOCs are considered suitable as a learning medium because they are open and massive.

"This skill is indeed important to teach, especially using MOOCs ... a tool that is currently trending as an alternative to off-campus learning, so it's not just learning theory. I also think MOOCs is suitable for this professional communication skill because it is flexible, massive, and practical so that it can be used by anyone. With the MOOCs system that can be accessed by anyone and at any time, of course, the skill of understanding these learning models is very suitable to be given through MOOCS. Because everyone may not learn at the same time."

MOOCs can provide flexibility, ease of access, and speed of completion at a low cost for anyone interested in learning. (Yuan & Powell, 2013). MOOCs are massive, *online*, and open learning *platform* that belongs to a form of *distance learning* with a wider and more massive scale (Pomerol et al., 2015). The need for academic materials and the potential of MOOCs that can be accessed by anyone openly and *massively* encourage the idea of developing *massive open online courses* that are useful for honing one's abilities or skills so that one can have the ability, experience, knowledge, and networking in the digital learning era.

In addition, expert interviews also provided input and suggestions regarding the content of the material that needs to be given to teachers to increase their skills to innovate in applying learning models. The following contents or things should be in the MOOCs *Learning Models to Improve Teacher Professionalism.*

"In my opinion... what is needed is of course suitable material. Various learning models are explained. The material provided also needs an attractive display, it can be in the form of PPT... Because interesting learning will make it easy to understand. The material certainly needs to include tips on implementing interesting learning models so that it can develop teachers' professional skills. In addition to the material, of course, it will be better if it is equipped with learning video media, there are practice questions, and discussions. I suggest that the material displayed can also be given context and solutions. Then, it needs enrichment material or other Open Education Resource (OER) to complement it."

3.2 Design & Development Stage

The results of the analysis stage that have been obtained are used for the next stage, namely *design,* and *development*. At this stage, the material content and image design were adjusted to teachers' professional skills in schools. This research focused on the development and content of MOOCs using the *Learning Management System* (LMS). The learning structure is

specifically designed by applying a *self-paced instruction* model that allows participants to manage their learning time according to their abilities. This research topic will develop popular skills an educator needs, namely learning models.

3.3 Implementation & Evaluation Stage

After being developed, MOOCs were implemented by experts involving media, material, and language experts to assess and know the feasibility and shortcomings of the MOOCs being developed so that revisions could be made. The feasibility of MOOCs that have been developed needs to be tested practically. It was done to assess its quality and feasibility. The feasibility test involved material experts, linguists, and media experts as respondents. After that, the media evaluation stage was carried out by improving the MOOCs based on the experts' assessment.

The feasibility test conducted by experts aimed to assess the MOOCs' *Learning Models to Improve Teacher Professionalism*. This test was conducted by experts who were competent in their fields, namely material, language, and media experts. The experts first tried the MOOCs that had been developed then they reviewed and observed them. After that, the experts were asked to fill out the questionnaire that had been provided. The assessment results were based on the feasibility of material, language, and media on MOOCs. The following is the description.

3.3.1 Media Feasibility Test

The assessment of the media validation test included two aspects, namely (1) the visual and audio appearance of MOOCs and (2) implementability and software engineering. The results of the assessment of media feasibility in MOOCs conducted by media experts can be seen in Table 1

Table 1. Media Feasibility Test Results

No.	**Aspects**	**Question Item Number**	**Average (%)**	**Criteria**
1	Visual and audio display of MOOCs	1-10	82,50	Very good
2	Implement ability and software engineering	11-15	80,00	Good
Average Overall Score			81,25	Very good

An explanation of the feasibility test results conducted by media experts on MOOCs conducted is as follows.

1. Visual and audio display of MOOCs
   Assessment of MOOCs' visual and audio appearance consisted of five indicators: the accuracy of *layout*, design suitability, clarity of images, writing, and video quality. Based on each indicator's average percentage of feasibility, 82.50% was obtained. The percentage shows the criteria of "Very Good" in MOOCs' visual and audio display.

2. Implement ability and software engineering.
   Expert assessment related to implementation and software engineering consists of two indicators: ease of use of the media and media quality. Based on each indicator's average percentage of feasibility, 80.0% was obtained. This percentage means that the implementation and software engineering of this MOOCs media has met the criteria of "Good ".

The percentage results of both aspects of the MOOCs media feasibility test obtained an overall average of 81.25% with the interpretation of "Very Good."

3.3.2 Language Feasibility Test Results

The language validation test assessment consists of three aspects: sentence effectiveness, communicative sentences, and language that is easy to understand. The assessment instrument is made according to the language feasibility standards on MOOCs media as needed. The following results of the assessment of language feasibility can be seen in Table 2.

Table 2. Language Feasibility Test Results

No.	**Aspects**	**Question Item Number**	**Average (%)**	**Criteria**
1	Sentence effectiveness	1-5	85,0	Very good
2	Communicative sentences	6-10	80,0	Good
3	Easy-to-understand language	11-15	85,0	Very good
Average Overall Score			83,33	Very good

The description of the assessment results of the MOOCs language feasibility carried out is as follows.

1. Sentences effectiveness

   The average percentage of expert assessment on each indicator is 85.0%, which means that the effectiveness of sentences in these MOOCs has met the "Very Good" criteria.

2. Sentences in MOOCs media are communicative.

   The average percentage of expert assessment on each indicator is obtained at 80.0%, which means that the sentences in MOOCs have been communicative by meeting the criteria of "Good."

3. Language on MOOCs media is easy to understand

   The average percentage of expert assessment on each indicator is obtained at 85.0%, which means that the language in this MOOCs media is easy to understand with "Very Good."

The percentage of the three aspects obtained the results of the overall average assessment of language feasibility in these MOOCs of 83.33% with the interpretation of "Very Good."

3.3.3 Material Feasibility Test Results

The material validation test assessment by experts included three aspects: content feasibility, presentation feasibility, and animated videos. The following results of the feasibility assessment of the material can be seen in Table 3.

Table 3. Material Feasibility Test Results

No.	**Aspects**	**Question Item Number**	**Average (%)**	**Criteria**
1	Content eligibility	1-7	82,14	Very good
2	Presentation feasibility	8-15	81,25	Very good
3	Use of animated videos	16-20	85,00	Very good
Average Overall Score			82,80	Very good

The description of the assessment results of MOOCs' material feasibility conducted by material experts is as follows.

1. Content eligibility

   Content feasibility assessment on MOOCs media consists of two indicators: the suitability of the material with the basic competencies and the accuracy of the material content. The results obtained on average for each indicator amounted to 82.14%. It means that the feasibility of content on this MOOCs media has met the "Very Good" criteria.

2. Presentation feasibility

   Assessment of the feasibility of presentation on MOOCs media consists of two indicators: the technique of presenting the material and supporting the presentation. The results obtained by the average feasibility of each indicator amounted to 81.25%. The amount of this percentage shows that the feasibility of presentation in these MOOCs has met the "Very Good" criteria.

3. Use of animated videos

   The assessment of the aspects of using animated videos on this MOOCs media consists of one indicator: the animation video component. The average percentage of the feasibility of each indicator is obtained at 85.0%. It means that it shows the "Very Good" category using animated videos on MOOCs.

The percentage results of the three aspects obtained the overall average result of this MOOCs media material feasibility of 82.80% with the interpretation of "Very Good."

4 CONCLUSION

Based on the problems and the expert needs analysis results, the teachers' professional abilities in schools are important. This ability can be done by understanding the right learning model to be implemented in learning. Therefore, the MOOCs *Learning Models to Improve Teacher Professionalism* developed studies of learning models that can be applied in education. Professional ability is an ability that is very important and needed by teachers in schools, so it is hoped that the MOOCs developed will provide provisions for participants, especially teachers so that they can choose the right learning model and innovate in the learning process so that learning objectives can be achieved effectively and efficiently. MOOCs are used because they have the advantage of being a massive, *online*, and open *learning platform* included in one form of *distance* learning on a wider and more massive scale.

This research focused on the development part of MOOCs *Learning Models to Improve Teacher Professionalism* using the *ADDIE Model,* which consists of two stages: the development and feasibility test. The first stage in the MOOCs development part is to make the MOOCs' content attractive. The MOOCs consist of seven materials that discuss basic concepts and learning models to improve teacher professionalism in schools. These materials include (1) Basic concepts of learning models, (2) Contextual learning models, (3) Cooperative learning models, (4) Problem-based learning models, (5) Thematic learning models, (6) Distance learning models, and (7) Independent learning models. The second stage is feasibility testing from experts. The feasibility of MOOCs that have been developed needs to be tested practically to assess their quality and feasibility. The feasibility test involved material, language, and media experts as respondents. The results of the overall average assessment of the feasibility of media, language, and MOOCs material with the interpretation of "Very Good ."Based on the media feasibility test results, it can be concluded that the resulting MOOCs *Learning Models to Improve Teacher Professionalism* meet the excellent criteria and are suitable for use as an open and massive learning *platform* to develop teachers' professional skills in implementing appropriate learning models in schools.

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