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Research Article

Development of Massive Open Online Courses (MOOC) Content to Improve Indonesian Teachers' Pedagogical Competence: MOOC Technology Instructional Process

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Abstract

This research is motivated by the problem of the low pedagogic competence of teachers in Indonesia; especially in West Java. Through the media model pro-duced in this research, it becomes a guideline and reference for teachers in implementing learning based on technology with the appropriate method. It will be a very effective "teacher training" to improve the pedagogic quality of teachers, especially basic teaching skills. Basic teaching skills are one of the important aspects of teachers' pedagogic abilities. Currently, multimedia technology is very adequate used as a medium for teachers to learn basic teaching skills, for example in the form of audio-visual or mobile applications. This research will produce Learning Innovations in the form of Massive Open Online Courses (MOOCs) Video Content on Basic Teaching Skills to improve Indonesian Teachers' Pedagogical Competence, which contains multimedia content, especially videos that will facilitate (tutors) lecturers, and teachers on how to teach well.

Keywords: Basic teaching skills, massive open online courses, pedagogical competence

1. Introduction

Teachers have a position as professionals. Teachers and Lecturers is defined as a professional, a person's job or activity becomes a source of revenue for the rest of their lives, and it necessitates knowledge, competency, or abilities that meet particular quality standards or norms, as well as professional education. As professionals, teachers are required to develop themselves in line with advances in science, technology, and art.

The strategic position of teachers as determinants of educational success is in line with the international consensus that one of the 17 SDG targets (sustainable devel-opment goals, 2015-2030) declared by the United Nations is "By 2030 all govern-ments ensure that all learners are taught by qualified, professionally-trained, moti-vated and well-supported teachers". The target more or less

states that the educa-tional process must be supported by qualified, professionally trained, highly motivat-ed, and fully supported teachers.

The dominant factors determining student achievement are: (1) student character-istics (49%), and (2) teachers (30%), (3) others (21%). Several other studies have also shown the magnitude of the influence of teacher ability on educational outcomes (Cowling & Birt, 2018). Based on the results of these studies and the achievement of one of the SDG targets, improving the quality of teachers in Indonesia is a strategic effort that must be carried out that will determine the quality of the next generation of the Indonesian nation. Thus, the competence of teachers becomes very important to always be re-viewed, developed and improved.

In reality, the existing conditions and situations are the reason why each teacher has differences in mastering the required competencies. To find out the condition of mastery of a teacher's competence, a teacher competency mapping must be carried out through the Teacher Competency Test (UKG) before participating in teacher certification in office. Teacher Competency Test (UKG) is intended to determine the map of teacher mastery on pedagogic competence and professional competence (Undang- Undang RI No. 20, 2003; Undang- Undang RI No. 14, 2005).

Report of the Secretary of the National Education Standards Agency (BNSP) in front of the participants of the XIII National Mathematics Conference and the In-donesian Mathematical Association Congress at Unnes Semarang some time ago. Why not, it turns out that the number of elementary school teachers in Indonesia who are not qualified to teach reaches 609,217 people or about 49.3% of the teach-ing staff in Indonesia. Even more surprised, based on the results of the competency test exercise on 30,000 Indonesian elementary schools teachers from primary to secondary schools level in 2004.

Furthermore, it reported several facts about the competence of Indonesian teach-ers, namely: (1) Ability to Master the Competency Field (Mulyasa, 2006; Syah, 2004; Usman, 2000). Based on the ability to answer competency tests, the average ability of prospective instructors' when conducting teacher candidate tests is 44%. Physic and mathematic competencies are the lowest one by reaching 33% and 46%, respectively. English is the top or highest competence of all at the gain of 58%. This fact shows how low the competence of prospective teachers in Indonesia is. We can predict the influence on graduates generated if pupils are taught by teachers who are incompetent. (2) Pedagogic ability; according to 2015 teacher competency data, the average pedagogic ability is 56.69%, (3) The quality of teachers based on their academic background is different, but not significant (2015 UKG assessment results), (4) From greatest to worst, below is the distribution of average teaching ability: Nusa Tenggara-Maluku-Papua, Java, Sumatra, Kalimantan, Sulawesi, and Nusa Tenggara-Maluku-Papua, (5) In districts and cities, there is no discernible variation in UKG outcomes, (6) UKG leads to decline dramatically within the last 41 years, (7) Teachers in public schools who are non-ASN (Public Servant) had the lowest UKG results, (8) There is no discernible difference in the skills of qualified and non-certified teachers, (9) The stronger the UKG score, the higher the qualification (teacher's ultimate education level).

These facts show that the competence of Indonesian teachers is still low on aver-age (Depdiknas, 2004). The four teacher competencies that are quite worrying, one of them is teacher pedagogic competence. Pedagogical ability of the teacher understanding students, designing and implementing learning, evaluating learning outcomes, and developing students to realize their unique potentials are all examples of pedagogic competence. This is where efforts are needed to improve the teaching abilities of teachers through various ways and strategies (Boschmann, 2003; Maister, 1997; Olivia, 1992; Schraw, et al., 2005).

Basic teaching skills are one of the important aspects of a teacher's pedagogic ability (Ali, 1985; Anderson & Ball, 1978; Barlow, 1985). At the time of attending teacher education these abilities are generally taught but on average the LPT has not yet matured in teaching these skills, teachers need a model that can be a reference for how to teach correctly (Joni, 2006; Sardiman, 2004; Slameto, 1995). Currently, multimedia technology is very adequate to be used as a medium for teachers to learn basic teaching skills, for example in the form of audio-visual or mobile applica-tions (Blasie & Palladino,

2005; Supriadi, 1998). The basic skills in question are opening lessons (set induction), managing learning (classroom management), providing reinforcement (reinforcement), asking skills (question skills), closing lessons (closure) and others (Pribadi, 2016; Strunk & White, 1979; Umardi, 1999; Yeni, 2004).

1.1 Competency concept

The term competence has now become a popular term along with the increasing importance of increasing competence for the nation's competitiveness, especially facing the MEA (ASEAN Economy Society). Ay and Acat (2015) explains the meaning of competence is the ability of a person to meet the requirements of work in an organization so that the organization can accomplish the desired goals..
According to Balakrishnan (2014) competence is a character trait that underpins a person's personality and is linked to the efficacy of that person's work performance. Competence is an element of a person's deep and intrinsic personality, as well as predictable conduct in a variety of settings and work duties.. From the two expert definitions, it can be concluded that competence is a comprehensive ability that is used to complete the demands of work.

Furthermore, Balakrishnan (2014) describes the characteristics of competencies that consist of five, namely: (1) Motives, something where someone consistently considers so that he can act or do particular thing. Someone with achievement motivation, for example, sets goals that are challenging for him, is totally accountable for accomplishing these goals, and expects some type of "feedback" to help him grow. (2) Character traits, i.e. the personality traits that cause people to behave in specific ways or how they react to certain situations. For instance, self-assurance, self-control, fortitude, or perseverance. (3) A person's attitudes and values make up their self-concept. Attitudes and values are assessed by administering tests to respondents in order to determine a person's worth and what makes them want to achieve something. (4) Expertise. Information that a person possesses in a specific field. Knowledge is a difficult skill to master. The knowledge test assesses participants' ability to select the most appropriate response, but it does not assess whether they are capable of performing the job based on their knowledge. (5) The capacity to perform a task both physically and mentally is referred to as skills.

1.2 Teacher Competence

Pedagogic competence, personality competence, social competence, and professional competence are examples of teacher competencies acquired during professional education". Furthermore, it also divides teacher competencies into 4 types, specifically, (1) pedagogical competence, (2) personality competence, (3) social competence, and (4) professional competency (Baloche & Brody, 2017).

1.3 Pedagogic competence

The ability to understand students and managers of educational and dialogical learning is referred to as pedagogic competence (Chai et al., 2019; Chai et al., 2019). This competency encompasses the capacity to comprehend students, create and implement learning, assess learning outcomes, and develop students to reach their full potential. In detail, the description of these competencies is contained in table 1.

Table 1: Sub-competencies and Essential Indicators of Pedagogic Competence

Sub-competence	Essential indicator
Understanding students	a.Using cognitive development principles to better understand students b.Using personality principles to have a better understanding of students. c.Determine the students' initial teaching needs.

Sub-competence	Essential indicator
Creating a learning environment	a.Putting learning and learning theory into practice. b.Develop learning techniques based on student characteristics, desired competencies, and teaching materials. c.Create a learning plan based on the strategy you've chosen..
Carry out your studies	a.Decide on a learning environment. b.Create an environment that is conducive to learning.
Assessment of learning outcomes.	a.Use diverse approaches to conduct continuous assessment (assessment) of learning processes and outcomes. b.Determine the mastery level of learning by analyzing the findings of the assessment procedure and learning outcomes. c.Creating a remedial or enrichment program based on learning completion data. d.Using the findings of learning assessments to improve the overall quality of learning programs.
Development of learners.	a.Assisting students in realizing their academic potential. b.Assist pupils in realizing their non-academic potential.

According to Hermawan et al. (2021) a teacher needs to always access the preconceptions of learning made by future teachers and recognize the rules of the game. This is because the advancement of science and technology has an impact on the progress of society, so that the demands of the community for better educational services are increasingly pressing. It was further stated that a teacher in addition to being required to master the subject matter well, must also be able to communicate the material to students in a good way and strategy, so that it is easy to catch and master the material.

Teachers who have good pedagogic competence will be able to understand what students need and want in the learning process. He knows the breadth and depth of the material that will be given to his students in accordance with their cognitive development. They have knowledge, but also know how to convey it to their students. In addition, he has many variations of teaching and appreciates input from students (Rudduck & Flutter, 2004; Arifin & Setiawan, 2022).

Digital video media has the advantage of increasing the knowledge and skills of teachers' pedagogic competence. There are three important benefits in using the program of learning videos, namely (1) developing knowledge and skills, (2) generating motivation and appreciation, (3) providing real experiences (From, 2017; Redecker, 2017; Van Laar et al., 2017). The advantages of digital video media are: (1) attracting attention, (2) showing movement, (3) repeating scenes, (4) displaying realistic elements, and (5) increasing emotions (Abbitt, 2011; Hernawan et al., 2021). From these many advantages, researchers are interested in conducting research, namely "Developing Massive Open Online Courses Content in the form of Digital Video media on Basic Teaching Skills to Improve Teacher Pedagogic Competence".

Referring to the background of the problem above, the general objective of this research is to produce a digital media model for basic teaching skills in improving teacher competence. The objectives of this research are: (1) developing Massive Open Online Courses Video Content Design in the Field of Basic Teaching Skills in improving teacher competencies, (2) knowing the Procedures for Massive Open Online Courses Video Content Development in Basic Teaching in improving Teacher competencies, (3) determining the Validity of Massive Open Online Courses Video Content in the form of Video Media for Basic Teaching Skills in improving teacher competence, (4) determining the teacher's response to Massive Open Online Courses Video Content on Basic Teaching Skills in improving pedagogic competence. Research provides theoretical and practical benefits. In the theoretical context, this research will contribute to the development of the scientific framework in the field of Educational Technology, especially in the aspect of ICT-based Media in Education and Learning. This Research on the Development of Digital Media Models for Basic Teaching Skills is part of the roadmap of the umbrella research framework of the Study Program, to strengthen the research and scientific posture in the field of Educational Technology, so this research has a strategic position both theoretically and practically.

2. Methodology

2.1 Research Design

Design and Development was the method employed in this study. "The systematic study of design, development, and evaluation processes with the goal of developing an empirical basis for the creation of instructional and non-instructional goods and tools, as well as new or upgraded models that govern their development," according to D&D Research. The implementation procedure research design consists of six steps: a) identify the problem, b) state the aim, and c) design and produce products/models. d) test models, e) assess test results, and f) communicate the model products that result.

3. Findings / Results

3.1 Digital Media Concept

Traditional media and digital media are two types of learning media. In this context, traditional media refers to a variety of media that are not supported by electronic devices or computers. While digital media is a type of media that requires computer equipment to use. Various media classified as traditional media are: books, posters, realia, and models (Gawrisch et al., 2019; Sukirman & Setiawan, 2022). The rapid advancement of digital technology, for example, has had little impact on the usage of printed teaching materials as a learning resource. This is because books have the ability to be random access, allowing users to pick and choose the sections or sections they want to study about. The development of digital media and networks, which has recently taken place very rapidly, has had a significant influence on all aspects of human life, including learning activities (Henderson et al., 2015). This development resulted in learning activities no longer only taking place with limited sources of information, but varied and open.

Figure 1: Digital Application in Conventional Instructional Process

Digital media is a form of electronic media in which data is stored in a digital format (as opposed to an analog format). Digital audio media is one of the results of the process of storing and transferring information digitally. A form of electronic media in which audio data as the object undergoes the storage and transfer of information in digital format (Johnson et al., 2014). Digital media is a form of electronic media that stores data in digital form, not analog. The definition of digital media can refer to technical aspects (hard drives as digital storage media) and transmission aspects (computer networks for the dissemination of digital information), but can also refer to final products such as digital video, digital audio, digital signatures and digital art (Kale, 2017; Kale & Akcaoglu, 2017; Kale et al., 2020).

3.2 Characteristic of digital media

Digital media is included in the category of new media media, according to Mishra and Koehler (2006) there are six characteristics of new media, including digital media, namely:

a) Digital: digitization is proven to improve transmission quality
b) Interactive (Interactive): Now there is TV, advertisements, interactive websites
c) Social media (Social media): That is media whose content is created and distributed through social interaction
d) Asynchronous Communication: Media consumption can be done at a time that is convenient for everyone
e) Narrowcasting (Spreading narrowly): Now TV and radio programming can be custom ordered according to individual tastes.
f) Multimedia: Old media such as newspapers and magazines can now create multimedia platforms with video on demand, citizen journalism and others.

Video media is included in the category of moving image media or motion pictures is a form of media that can display moving visuals along with sound. Films and videos are examples of this form of media. As a communication medium, both types of media have unique characteristics or capacities. Videos and films are able to display information and knowledge in a realistic display.

Figure 2: Multimedia Laboratory for Audio-video Production of MOOCs

Videos and films can also display real-life events and things. Students or viewers will have an immensely successful learning experience if these two sorts of media are used wisely. According to Van Laar et al. (2017), the video medium can bring various benefits in terms of sharing information and knowledge, namely:

a) Video can show motion pictures as well as information that has motion aspects. The ability to display moving visual elements is a feature of the video medium.
b) Video can be used to show the stages of a procedure.
c) Gradual movements can be adequately demonstrated using this medium. Slow motion techniques, for example, can be used to demonstrate flower growth.
d) Video can be utilized as a secure observation medium. Images in the form of objects recorded in a video program can be securely viewed by the user. If the recorded object is directly observed, it may represent a threat. If you look closely, the chemicals employed in an experiment, for example, can be harmful. However, if the chemical experiment is captured on video, the harm it poses can be mitigated.

e) Videos can be utilized to teach a certain ability. Lessons in athletics, for example, can be learned successfully through video. Existing video features, such as the capacity to slow motion (slow motion) and stop a moving image (frozen frame), can be utilized to investigate specific aspects or processes of a motion.

f) Dramatization in a video show might elicit strong emotions in viewers. As a result, the video medium has the potential to influence individual and social attitudes. Video is utilized in the commercial and industry world to watch and analyze social relationships between persons.

g) Videos can be utilized to learn about and appreciate the culture of different countries or ethnic groups. This media can be used to document unique and rare rites or rituals that occur within an ethnic group, so that viewers can learn from the ceremony.

h) A medium video can be utilized to present a group of viewers in different locations with the same (shared) experience. The same experience, which can be portrayed through video, will motivate viewers to become active participants in a topic's conversation.

3.3 Massive Open Online Courses (MOOCs) Concept

The public knew the concept of MOOCs as an application in Educational technology in 2008. The course in question is Connectivism and Connective Knowledge (CCK08). This course is based on the theory of Connectivism which was created by George Siemens as an alternative to existing theories which he thinks are more suitable for application in the digital era. At that time the CCK08 course had as many as 25 students who signed up for a fee while another 2300 students had registered free. From there they see that knowledge can be shared with everyone around the world and are excited by the virtual interactions and connections that can be made through active online conversations. Therefore, to take advantage of the use of the internet by connecting (connectively) every individual who wants to learn, share knowledge widely and wants to see how far he can go, MOOC is achieved. MOOC can also provide opportunities for anyone around the world who wants an education but doesn't have the ability to get the same education of the same quality no matter who you are and where you are.

Massive Open Online Course is defined as a model in delivering learning material online to anyone who wants to attend lectures, without a limit on the number of participants (Mouza et al., 2014; Phelps & Lee, 2003; Sastrawijaya, 1998). Another definition of MOOCs is a model of massive education delivery, where theoretically there is no limit to the number of participants; open, because anyone is allowed to participate and usually free of charge; and online, because learning activities usually occur in a virtual environment. This educational model is also designed in such a way as to achieve the learning objectives that have been set (Oakley, 2020). In summary, it can be said that MOOCs are a model for providing online education; learning activities occur through web media; and is open and mass.

MOOC is defined as follows: "MOOC stands for Massive Open Online Course or online courses that are open on a large scale. MOOC courses are open to the public, can be followed by anyone, anytime and anywhere". The above definition explains the open and massive nature of learning, the target is anyone regardless of age, time, profession, distance and location with online media as the channel. Judging from these aspects, the learning of this model can be said to reflect some of the characteristics of the "democratic education" model. Redecker (2017) once loudly voiced "school is dead". In essence, he voiced the importance of alternative education, namely "democratic education" that liberates outside the school system. He was a major supporter of Ivan D. Illich who introduced the ideas of the Deschooling Society. However, what democratic education looks like outside a school system that is right for all. There is no standard form that is ideal and universally applicable.

Bates in Rosenberg and Koehler (2015) explains that although the platforms currently used for MOOCs are very diverse, they have four basic characteristics, namely:

a) Massive. The notion of infinite scalability applies to MOOCs, which means that the scale is

limitless. For each lecture, the number of MOOC participants might approach hundreds of thousands. This is due to the fact that there are no technical limitations that can limit the number of participants.

b) Open. There are no prerequisites for participating in MOOCs. All you need is a computer or a mobile device to access it, as well as an internet connection. Furthermore, some MOOCs are available for free; some only charge a fee for the learning outcomes assessment process and the certificate that participants will receive; and others charge a certain fee for joining MOOCs. On some platforms, this openness can also be seen from the opportunity for institutions to take advantage of the platform in developing their own MOOCs, or the freedom to regulate IPR from the materials they provide through MOOCs.

c) Online. In the early days of its development, MOOCs offered online access to all parts of their activities. However, in subsequent developments, several universities used MOOCs to support conventional lectures. The university provides MOOCs material through a certain platform and then students use the material, for example lecture recordings, reading material, and quiz questions. This online lecture is combined with conventional lecture methods in the form of face-to-face in class. Thus, there is an opportunity to carry out face-to-face group discussion activities, conduct trial projects or hold quizzes to find out the progress of each student.

d) Courses Lectures organized by MOOCs are managed as one complete lecture. This course, which is organized around learning objectives, requires students to study prescribed reading materials, listen to lecture presentations, take quizzes, and complete assignments. Participants are also urged to participate in online discussions using the venues offered. Participants who have finished their studies can also receive a certificate.

The MOOC content design developed in this study is a learning video media that begins with a needs analysis. Needs analysis is done through literature study. The process of needs analysis in making learning videos the first stage that must be done is to formulate learning objectives to be achieved, prepare reference books and related learning resources with the substance to be discussed, compiling ideas in the form of a video content design, identifying the material to be raised in the learning video, and formulating learning outcomes and indicators to be achieved from problem solving in the learning video.

Researchers determine in advance the general objectives and learning objectives. Researchers set the general goal of helping teachers to recognize basic teaching skills. After that, the researcher made a list of materials that could be presented to the teacher and thought about presenting the appropriate material. The researcher then compiles ideas in the form of an Outline of Media Content (OMC) in its preparation that includes the main material, objectives/indicators, materials, media, and references. The flow of making is by analyzing the modules and books that have been prepared to determine the topic of discussion and material, then formulating the indicators to be achieved, then determining the main material to be presented, and including references that the researcher uses in its preparation.

In developing MOOC content, the first step is to draw up a lesson implementation plan (LIP) as shown in the explanation of the LIP example for the Learning Media Course as part of basic Teaching Skills.

4. Lesson Implementation Plan (Lip)

4.1 Course Identity

a) Name of Course: Instructional Media
b) Study Program: Educational Technology
c) Code/ Credit: three credits

4.2 Competency Standard

Students have knowledge, skills and positive attitudes in developing learning media in the context of formal and non-formal education, including design, use and evaluation.

4.3 Course Description

The course aims to make students have knowledge, skills and positive attitudes towards the development of learning media so that they are able to design, use and develop media in learning in formal and non-formal education environments, especially in elementary schools. Topics covered in this module include; Definition of learning media, The position of the media in the context of educational communication, The position of the media in the learning system, Patterns of conventional learning to media, History of media development (life time of media). Functions of media in learning, benefits of media on learning processes and outcomes, outcomes the results of research are the benefits of media in learning at various levels of education. The theory of cone of experience from Edgare Dale, consist of classification of media according to experts, characteristics of audio, visual and audio visual media, characteristics of realia media, characteristics of computer-based media, characteristics of simple and graphic media, concepts print media, characteristics of non-printed media, non-print media (electronic) concepts, characteristics of non-printed media (electronic). It also includes techniques for designing competency-based learning materials, principles of selecting learning materials, procedures and coverage of learning materials, steps in designing and utilizing materials learning in language making print and non-print teaching design concepts for learning media development. To add, it covers steps in making learning media, techniques for making media planning outlines (GMPM), techniques for making print and non-print media scripts, and the process of making learning media.

The lesson plan above is to be break down into several detailed steps presented in the scheme in the table 2 below.

Table 2: Course Scheme

No	Basic competence	Indicator	Topic and sub-topic
1	2	3	4
1	Understanding the Concept of Learning Media	1.Understand the history of the development of learning media 2.Understanding media etymologically (Language aspect) 3.Understand the terminology of media concepts according to related experts, institutions or policies	1.The history of the development of learning media 2.Etymologically the concept of Media (Language aspect) 3.Terminologically the concept of media according to related experts, institutions or policies
2	The Position of Media in Learning Systems and Communication Systems	1.Understand the components of the learning system 2.Understand the position of the media as an integral part in learning 3.Understand the concept and Characteristics of Communication 4.Understand the position of the media as part of the system in communication	1.Learning system components 2.The position of the media as an integral part in learning 3.The Concept and Characteristics of Communication 4.The position of the media as part of the system in communication
3	Taxonomy and Types of Learning Media	1.Understand Taxonomy Media from several experts 2.Understanding the Types of Media According to Experts 3.Understand the characteristics of the Type	1.Taxonomy Media from several experts 2.Types of Media According to Experts 3.Characteristics of Media Type
4	Understanding the functions, benefits and advantages of media in learning	1.Identify the function of media in learning 2.Mention the benefits of media on the process and learning outcomes 3.Identify the results of research on the benefits of media in learning at various levels of education 4.Explain the cone theory of experience from Edgare Dale	1.The function of media in learning 2.The benefits of media on the process and learning outcomes 3.Research results on the benefits of media in learning at various levels of education 4.The cone theory of experience from Edgare Dale

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No	Basic competence	Indicator	Topic and sub-topic
5	Understanding the classification and characteristics of Audio Visual media (Multimedia)	1.Explain the classification of media according to experts 2.Identify the characteristics of audio, visual and audio visual media 3.Identify the characteristics of realia media 4.Identify the characteristics of computer-based media 5.Identify simple media and graphics	1.Classification of media according to experts 2.Characteristics of audio, visual and audio visual media 3.Characteristics of realia media 4.Characteristics of computer-based media 5.Characteristics of simple and graphic media
6	Understand the classification and characteristics of simple and real media	1.Explain the classification of Simple, 3Dimensional/solid media 2.Identifying the characteristics of simple media (simple) 3.Identify the advantages of simple media 4.Identify ways to develop simple media	1.Simple, 3Dimensional/solid media classification 2.Characteristics of simple (simple) medi 3.The advantages of simple media 4.How to develop simple media
7	Understand the characteristics of printed or graphic media	1.Explain the concept of print media 2.Understand the characteristics of print media 3.Explain the type of Print/graphic media 4.Identify the advantages and disadvantages of print/graphic media 5.Understand how to develop print/graphic media	1.Print media concept 2.Characteristics of print media 3.Print/graphic media type 4.Advantages and disadvantages of print/graphic media 5.How to develop print/graphic media
8	Understanding the ASSURE Model as a reference in media selection	1.Explain the basic concept of ASSURE 2.Analyze each Acronym in ASSURE 3.Applying the ASSURE Model in Learning activities 4.Analyze the advantages and disadvantages of the ASSURE Model	1.The basic concept of ASSURE 2.Meaning of ASSURE 3.Application of the ASSURE Model in Learning activities 4.Advantages and disadvantages of ASSURE Model
9	Understanding the process of developing learning media	1.Explaining the design concept of learning media development 2.Explaining the steps in making learning media 3.Analysis of the ADDIE model in designing learning media	1.The design concept of learning media development 2.The steps in making learning media 3.Techniques for making Media Planning Outline (GMPM) 4.The technique of making print and non-print media scripts 5.The process of making learning media
10	Media Planning Design (GBPM, Storyboard and Script)	Understand the techniques in making Production Planning including GBPM, Storyboard and Scripts	Techniques in making Production Planning include GBPM, Storyboards and Scripts
11	Presentation Multimedia Development	1.Explain the concept of multimedia presentation 2.Explain the advantages of presentation media 3.Identifying Principles in making presentation media 4.Explain the steps in making presentation media 5.Identify some presentation media software	1.The concept of multimedia presentation 2.The advantages of presentation media 3.Principles in making presentation media 4.steps in making presentation media 5.Some presentation media software
12	Internet-based Media Development (Online Learning)	1.Explain the concept of online-based media 2.Explaining the advantages of online-based media 3.Identifying Principles in making online-based media 4.Explaining the steps in making online-based media 1.Identify several online-based media media software	1.The concept of online-based media 2.The advantages of online-based media 3.Principles in making online-based media 4.Steps in making online presentation-based media 5.Some online-based media software
13	Mobile Device Based Media Development (Mobile Learning)	1.Explain the concept of Mobile Learning 2.Explain the advantages of Mobile Learning 3.Identifying Principles in making Mobile Learning 4.Explaining the steps in making Mobile Learning 5.Identify some Mobile Learning software	1.Mobile Learning Concept 2.Advantages of Mobile Learning 3.Principles in making Mobile Learning media 4.Steps in making Mobile Learning presentations 5.Some Mobile Learning software
14	Evaluation of Learning Media	1.Explain the concept of media evaluation 2.Explain the advantages of conducting media evaluation 3.Identifying the principles of making media evaluation instruments 4.Explaining the steps in making media evaluation instrument media 5.Understanding Components/Indicators in media evaluation	1.Media evaluation concept 2.The advantages of conducting media evaluation 3.Principles of making media evaluation instruments 4.The steps in making the media evaluation instrument media 5.Components/Indicators in media evaluation

Based on the course scheme above, it is followed by implementing its systematical order into real activities through technology-based practice referring to the lesson implementation plan and outline media content which can be seen on the figures below.

Figure 3: MOOCs Scheme Trial

Figure 4: Interactive Design Product Trial for Teachers by MOOCSs

Entering the design stage, the researcher first developed a Lesson Implementation Plan (LIP) and an Outline of Media Content (OMC). The preparation of the LIP and OMC aims to facilitate the media development process.

After the LIP and OMC were completed, researchers began to look for and create graphic and audio-visual assets that were needed in developing learning video media according to the storyboards that had been prepared previously. In practice, the creation of graphic assets is carried out first by looking for appropriate graphic assets on the website of a free graphic asset provider, namely id.pngtree.com, then re-edited using Adobe Photoshop CC 2021 software. As for audio assets, researchers used files existing audio through the website providing free audio assets at soundcloud.com, and the researcher uses some video footage as supporting material from YouTube.

4.4 Software Development for MOOCs

In the process of producing MOOC products, the next stage is conducting a literature study and expert discussion to determine the product in the form of a system design or called software engineering namely; The Software Requirements Specification (SRS), and the resulting its design is as follows.

Table 3: MOOCs Software Requirement Specifications

Software name			EMOOC UPI
Tagline			Education University Experiences
Platform			Web Based
Goals			As a means to improve the competence of Professional Human Resources in the Field of Education
Target			Pre- service teacher Teacher Lecturer
App Users			Educators Learners
URL			http://mooc.upi.edu
Feature	1	Enrollment	Registration for participants both as teachers and as participants. In this form, the applicant must have chosen whether as a student or as a teacher. Registration function to get an account Form that must be filled: -Full Name -Email Address -Email Password The password can be directly included with the email, meaning that the system can scroll through the email or the password is sent via email. In the registration column, you can also list all of your positions as students, but in it there is one option / offer to become a teacher.
	2	Login	It is enough to provide one login and when the user enters his/her account, he/she will be immediately directed to his/her position whether as a learner or as a teacher
	3	Menu Cources	There is a list of courses offered with various topics, such as: Teaching Skills ICT-Based Media Development of Teaching Materials Etc.
	4	Search	Search for the topic desired by the learner
	5	Contents of Course Initial View	Course Title and Sub/Subtitle Star : user level marker Number of users who are currently or have joined Author Identity, for example "Created By" Course objectives, for example with the words "What will be obtained in this course" Requirements: Initial skills that must be mastered by participants Course Description: Contains a limited number of words, for example 200 words that describe the substance of this course. User Reviews: In the form of user satisfaction comments on the courses that have been followed. Course Fee: There is a nominal fee offered plus a discount, so how much must be paid. Select basket.
	6	Selected course content	Course Name The name of the teacher and his brief profile, accompanied by a photo Meeting List, already plotted Material (Video) Discussion Forum Quiz / Evaluation

The application produced in this research can be accessed at the URL, namely: http://pembelajaran.mooc.upi.edu.
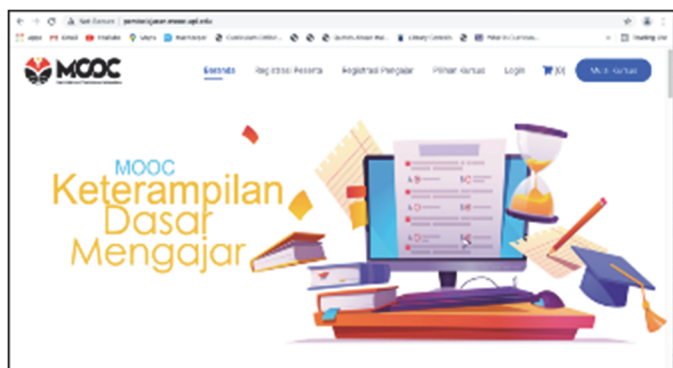

Figure 5: MOOCs Interface Image

Regarding to the application above, the video content design on Massive Open Online Courses is intended to improve teacher competence by obtaining quality content, a special procedure is needed which essentially involves the creative process of a standard content development. The stages of MOOCs content design are: (1) curriculum analysis, context analysis, user analysis, (2) pre-production that includes making GBPM, scripts, storyboards, scripts and shooting scripts. (3) The production stages include shooting, taking sound, making animation, taking video, and the editing or editing process. (4) At the post-production stage, validation of the model made in this case is the content of MOOCs.

5. Discussion

The procedures for Massive Open Online Courses Video Content Development in improving teacher competence for the video production flow covering: (1) Concept: is the earliest stage before the collaboration begins. We always listen to the wishes, briefs from clients, and try to accommodate those needs. At this stage as well, we will provide input and possibilities that a project can take, ranging from possible forms, storylines, visual approaches, directing style, speech tone, etc. After the concept is approved and the cooperation agreement is agreed, then we proceed to the next step. Through the concept, we can start planning distribution and marketing strategies so that the results are maximized. (2) Manuscript, is an agreed concept, we will elaborate it into a manuscript. At this stage, all descriptions become more detailed and in-depth. Like a film script, the subtitles have been made in the order in which the video ends. Just like the previous step, we will work with partners so that the results can be maximized. (3) Storyboard, the stage after the script is agreed upon, and then we will make a storyboard. The shape is like a comic strip, which is a sequence of pictures to be taken when shooting. At the same time, the production team will manage the shooting schedule and organize the crews that will be involved during filming and post-production.

Massive Open Online Courses Video Content in improving teacher competence has met the validations process. Validation is the process of demonstrating that a process/method can consistently provide consistent results in accordance with well-documented standards. Validating learning media is an action or a proof for learning media whether it is in accordance with what will be invited to students effectively and efficiently, by looking at the activities or teaching being taught and to prove whether the learning media, has been able to help and be used by educators and participants learn in the learning system. How to validate learning media, namely: (1) Basic Input Related to the initial learning media from the target of validating the learning media itself: In general, learning media are aids to the teaching and learning process. Everything that can be used to assist the learning process by stimulating the learner's ideas, feelings, attention, abilities, or skills. This restriction is broad and comprehensive, encompassing the concepts of resources, environment, people, and learning/training methods such as; books, movies, videos and so on. (2) Instrumental inputs, especially those related to learning media materials, were obtained and validated from the following aspects: (1) The substance of the learning content, the adequacy of data and information from sources, especially those related to the content of the media used for learning, (2) learning media, including materials for formulating the types and methods of using learning media in accordance with the substance of the learning content and the characteristics of the learning media, (3) Learning resources, may include human resources, places, centers or activities that have the potential to be used as learning resources in the implementation of the learning process. Teaching is used by both learning residents and educators.

The process of teaching and learning activities using learning media, validation aspects that are taken into consideration include: (1) learning activities that have taken place, this needs to be validated to make it easier for students to learn by using a learning media, (2) learning habits using learning media, it is often not realized that students have the habit of learning by using an intermediary such as learning media. Because learning if using a media will make it easier for students to learn, (3) The implementation system in learning, students already have procedures for

carrying out an activity even though it is arranged informally. They already have criteria for determining who will be the chairperson, organizing arrangements, stages of activities and even how to evaluate them. Validation of data and information related to this aspect provides input in determining the program implementation system.

In general, participants gave a positive response to the use of video content in Massive Open Online Courses on Basic Teaching Skills in improving Pedagogic competence. MOOC is able to provide additional knowledge, insight, attitudes related to pedagogical competence for students.

6. Conclusion

Referring to the discussion in previous sections, a common thread can be drawn that pedagogic competence needs to be improved continuously and continuously through various efforts, including utilizing digital media in the form of MOOC. These efforts include improving the pedagogic competence of teachers, especially in the aspect of basic teaching skills through various methods and strategies, including the use of digital media. In general, it can be concluded that the development of Massive Open Online Video Digital Courses Content on basic teaching skills to improve pedagogic competence can be done through a model development system approach with stages namely analysis, design, development, implementation and evaluation.

There are two important combinations in the development of MOOC, namely: (1) development on the software aspect, as a virtual engine that functions as a virtual class instead of a real class, this software is generally still in line with the context of the learning management system (LMS). (2) Development on the content aspect. There are two modes of content that can be developed in MOOC, namely: self-design (media by design) and instant utilization (by utilization).

7. Recommendations

This study recommends that future research to investigate on how Massive Open Online Courses Video Content could be implemented at different level of education from the primary to higher education. This consideration is based on the fact that instructional process enhanced by technology contribute positively to the progam learning outcomes accomplishment for the students during their study.

8. Limitations

The subject or target of this study is limited to the teachers into particular or specific competence at the pedagogical dimension or aspect. It is done by the consideration that its competence becomes the initial primary part for the Indonesian teachers to do the teaching-learning process through knowledge and experience transfer or sharing.

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