IMPLEMENTATION OF MASSIVE ONLINE OPEN COURSE (MOOC) THROUGH PINTAR IN IMPROVING TEACHER COMPETENCE

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ABSTRACT
Improving teacher competence is an integral part of the quality of education. To fulfill this commitment, the Ministry of Religious Affairs innovated by launching PINTAR, a platform that provides Massive Online Open Course (MOOC) based training. This study aims to examine the implementation of PINTAR to improve teacher competence through MOOC-based training. This study is qualitative research with a case study approach. Data collection is done through interviews, observation, and documentation. Research subjects were selected by purposive sampling method. The collected data is then validated using data triangulation techniques. The findings of this study indicate that the implementation of PINTAR as a MOOC-based teachers' training provider is an innovation that aims to fulfill teachers' training rights, improve teacher pedagogic and professional competence, maintain teacher productivity, and create efficiency in teacher training.
Keywords: Massive Online Open Course (MOOC), Pintar, Teacher Competence

Introduction

Training as an effort to increase teacher competence is an integral component in realizing quality education. Regulation of the Minister of Religious Affairs of the Republic of Indonesia number 19/2020 shows the government's efforts to achieve quality education through the development of teacher competence in a sustainable manner. Periodic training for teachers is also a strategy for educational institutions in realizing quality education (Afidah et al., 2022). Munif Chatib (2018) even explicitly places the records of training for teachers as the main barometer for identifying the quality of educational institutions. That is, the frequency of opportunities for self-development for teachers is directly proportional to the professionalism of teachers and leads to the quality of education provided.

The urgency of training in improving teacher competency was further translated by the Ministry of Religious Affairs through several programs, including the implementation of the Massive Online Open Course (MOOC) through the PINTAR platform. PINTAR is an acronym for Training and Learning Information Center (Pusat Informasi Pelatihan dan Pembelajaran). PINTAR as a training platform initiated by the Center for Education and Training (Pusdiklat) for Education and Religious Technical Personnel of the Ministry of Religious Affairs since 2022 is a form of training and learning innovation in the industrial era 4.0 which is intended for State Civil Apparatus (ASN), Government Employees with Work Agreements (PPPK), Non-State Civil Servant Employees (PN-PASN), as well as the community who assist the Ministry of Religious Affairs.

The MOOC is defined as a model for delivering learning material online to anyone who wants to take part in learning, without limiting the number of participants. Another definition of MOOC is a model of providing education that is massive and theoretically removes the limit on the number of participants. MOOC is also open because anyone is allowed to participate and it's even free. MOOC is also online because learning activities usually occur in cyberspace.

In summary, it can be said that MOOC is an online learning model that anyone can follow and has an unlimited number of participants (Weller, 2014).

The term MOOC was first used in 2008 by Dave Cormier from the University of Prince Edward Island after attending the Connectivism and Connective Knowledge (CCK08) training organized by George Siemens from Athabasca University and Stephen Downes from the National Research Council. Because of these achievements, both became known as the founders of MOOCs. This shows that the implementation of the MOOC was initially individual and not institutional. (Siemens, 2013; Weller, 2014).

Since its emergence in 2008, MOOC has attracted the attention of many researchers. Results of research by Araz Boskurt, Nilgun Ozdamar Keskin, and Inge de Waard (Bozkurt et al., 2016) "dramatically" referred to this phenomenon as a Tsunami wave in MOOC research. Through a purposive sampling method of 51 English theses and dissertations related to MOOC from 2008 to 2015, the study stated that education with a percentage of 51% is a scientific discipline that is widely used in studying MOOC compared to five other scientific disciplines. This MOOC study from an educational perspective is then divided into 2 phases. In the first phase, the research theme includes the development of connectivism as a learning theory and technological innovation. The themes in the second phase include learning analysis, assessment, and critical studies related to MOOC.

The discourse related to MOOC that specifically examines the implementation of MOOCs in increasing teacher competence is research conducted by Nikolaos Koukis and Athanassios Jimoyiannis (2019) with the title "MOOCS for teacher professional development: exploring teachers' Perceptions and Achievements". This study concludes that the MOOC training design used to increase the professionalism of Greek language teachers in schools runs effectively through an emphasis on participant involvement, the interaction between participants, and collaborative learning.

Research conducted by Gaurav Singh (2022) focuses on studying the quality of MOOCs for increasing the competence of educators in India. The research entitled Quality of MOOC for Teachers' Professional Development: Participants' Perception used 101 lecturers who had completed MOOC as a sample. Using a quantitative method, this study uses six indicators to see MOOC quality, which includes learning information, learning arrangements and delivery, application appearance, interactivity in training, technological convenience, and assessment strategies. The findings state that MOOC in India has not fulfilled the 6 quality indicators.

Based on a bibliographical search, research that specifically places PINTAR as an object of study has never been conducted. This research will focus on the implementation of MOOCs held through the PINTAR platform. MOOC-PINTAR as an effort to increase teacher competence offers changes from face- to-face forms. Thus, reviewing the offers provided by MOOC-PINTAR compared to face-to-face training is relevant for the study. This paper will focus on the implementation of MOOC through the PINTAR platform in increasing teacher competence by discussing the four aspects offered by the PINTAR training which consist of problem-solving, training materials, training design, and efficiency.

Methods

Research on the implementation of MOOC-based training in improving teacher competency is qualitative research with a case study approach. Data collection methods in this study use interview techniques, observation, and documentation. The research subjects were selected using a purposive sampling method (Sugiyono, 2012) which included the PINTAR platform team at the Pusdiklat Technical Staff for Education and Religion, Ministry of Religious Affairs of the Republic of Indonesia. The data obtained were then validated through data triangulation techniques between the results of interviews, observations, and documentation.

Findings

MOOC-PINTAR Solution

Generally, MOOC-PINTAR is an innovation from the mandatory policy carried out by the Ministry of Religious Affairs. As the regulation stipulates that every civil servant has the right to receive a minimum of 20 hours of training per year to develop their competencies (PP 17/2020). The Pusdiklat for Technical Personnel is an institution that has the task of organizing training for education and religious technical staff under the Ministry of Religious Affairs (PMA 19/2020). The two regulations show that the Ministry of Religious Affairs has the responsibility to provide training with a duration of 20 hours of study at least once a year to all civil servants of the Ministry of Religious Affairs.

Muhtadin, Head of the Administrative Section of the Pusdiklat for Education and Religious Technical Personnel as well as PINTAR coordinator, explained that the responsibility of the Ministry of Religious Affairs to organize training becomes irrational if it has to be conducted face-to-face and with limited training institution facilities. Pusdiklat and Religious Training Centers (BDK) owned by the Ministry of Religious Affairs take a long time to complete training responsibilities for all civil servants if it is conducted through conventional form.

> *"Basically, if we count the number of bed facilities here (Pusdiklat), multiplied by 52 (number of weeks in a year) then the result is 6,240 participants. 52 is the assumption if there is no holiday. A full year of training is held. That is the capacity of the participants here if the training is conducted face-to-face. Can you imagine how long it will take to complete the training for all civil servants of the Ministry of Religious Affairs?"* [1] *(Muhtadin)*

Based on data as of August 29, 2022, the number of Civil Servants in the Ministry of Religious Affairs is 2,102,932 (Ministry of Religious Affairs, 2022). The capacity of the two training centers plus the 14 BDKs owned by the Ministry of Religious Affairs in all provinces is 52,000 participants per year (Training Center of Ministry of Religious Affairs, 2022). This means that it will take more than 40 years to complete the training responsibilities for all civil servants.

The face-to-face training that has been implemented so far also has several weaknesses. According to Muhtadin, competency improvement that has been implemented so far has disrupted productivity. To maintain productivity, working hours cannot be used other than for work. As a solution, increasing knowledge and skills need to be done outside working hours. This is the reason the selection of training through the PINTAR platform is made asynchronously. Asynchronous training means that the interaction between the instructor and the participants in the training does not occur directly and at different times. Thus, participants can choose the implementation of the training by the availability of time without disturbing working hours. This is expected to bridge the gap between increasing competence and productivity.

> *"In companies, training by leaving working hours counts as a loss for the company. If one day workers can generate a profit of 5 million for the company, how much profit is lost due to training? This PINTAR is to get around so that competence development continues and productivity is not disrupted."* [2] (Muhtadin)

Muhtadin also explained that technical deficiencies in face-to-face training could be overcome through MOOC-PINTAR. Through PINTAR, training results can be well documented. The PINTAR application can record training data which includes the number of participants, participant mapping, participant satisfaction levels, material difficulty level, and problem analysis. These data can also be mapped easily.

MOOC PINTAR Materials

MOOC-PINTAR has a different paradigm in planning related training materials. MOOC-PINTAR does not use competency-based mapping to determine training materials

because it is considered inefficient. As a solution, the PINTAR training applies the paradigm that the competencies of all participants are analogous to numbers. Before the training, all participants were considered 0 or no competence. After participating in the training, participants are considered to have competence with certain values so that they can then move towards achieving organizational goals. The supervisor in this case is the guarantor of the quality of training through supervision activities.

> *"Mapping the competence of participants in planning trainingmaterials is not efficient. If it is mapped that 10 competencies must be improved today, then tomorrow it will be 20 competencies. In this era, change can be very fast".*
> (Muhtadin)

Determination of the material, based on Muhtadin's explanation, was carried out through internal preparation. There are three criteria for MOOC- PINTAR materials. First, training materials are in terms of transfer of knowledge. Second, the material can be used as a tutorial, such as how to fill in the EMIS and eRKAM. Third, materials intended to serve individual participants' tasks, such as writing training.

Since 2022, the PINTAR platform has hosted seven MOOCs with four themes. The theme includes Multimedia-Based Learning Media Training, Classroom Action Research (PTK) Training, Merdeka Curriculum Training at Madrasas, and Scientific Writing Training for Principals and Extensionists. Thus, out of all the training held through PINTAR, there were six trainings with three themes each lasting 60 hours of lessons that were directly related to increasing teacher competency. Each training consists of 3 sessions, namely introduction, basic group, and core group.

Tabel 1.1 MOOC-PINTAR Materials

No	MOOC Materials	Time	JP	Modules
1.	Multimedia-Based Learning Media	18th July 2022 – 4th July 2022	60	Introduction: 1.1 Video Welcome toPINTAR 1.2 Overview 1.3 Building LearningCommitment
				Base Group: 2.1 Religious Moderation andNational Development 2.2 Basic Values of HumanResources (HR) of the Ministry of Religious Affairs 2.3 System of Ministry ofReligious Affairs HR Training and Development
				Core Group: 3.1 Utilization of Word andData Processing Applications 3.2 Creating learning videos 3.3 Creating MultimediaPresentations 3.4 Utilization of ScreenRecorder and OBS 3.5 Creating a Blog as a Learning Portfolio
2	Multimedia-Based Learning Media	19th August 2022 – 28th August 2022	60	Introduction: 1.1 Video Welcome toPINTAR 1.2 Overview 1.3 Building LearningCommitment
				Base Group: 2.1 Religious Moderation andNational Development 2.2 Basic Values of HumanResources (HR) of the Ministry of Religious ffairs 2.3 System of Ministry ofReligious Affairs HR Training and Development
				3.1 Utilization of Word andData Processing Applications Part 1 3.2 Utilization of Word andData Processing Applications Part 2 3.3 Making learning videos 3.4 Making MultimediaPresentations 3.5 Utilization of Screen Recorder and OBS Part 1 3.6 Utilization of Screen Recorder and OBS Part 2 3.7 Creating a Blog as a Learning Portfolio Part 1 3.8 Creating a Blog as a Learning Portfolio Part 2
3.	Training of Class room	25th July 2022 - 31st July	60	Introduction: 1.1 Video Welcome toPINTAR 1.2 Overview 1.3 Building LearningCommitment

	Actio n Resea rch (PTK)	2022	Base Group: 2.1 Religious Moderation andNational Development 2.2 Basic Values of HumanResources (HR) of the Ministry of Religious ffairs 2.3 System of Ministry ofReligious Affairs HR Training and Development
			Core Group: 3.1 The Essence of ClassroomAction Research 3.2 Class Action ResearchSteps 3.3 Designing ClassroomAction Research 3.4 Improvements in Classroom Action Research Learning 3.5 Analyzing and Interpreting Data andFollow-Up PTK 3.6 Classroom Action Research Results Report
4.	Traini ng of Kurik ulum Merd eka in Madr asah	26th October 2022 - 6th Novemb er2022 & 3rd February 2023 – 14th February 2023	60	Introduction: 1.1 Video Welcome to PINTAR 1.2 Overview 1.3 Building LearningCommitment
			Base Group: 2.1 Religious Moderation andNational Development 2.2 Basic Values of HumanResources (HR) of the Ministry of Religious Affairs 2.3 System of Ministry ofReligious Affairs HR Training and Development
			Core Group: 3.1 Development of MadrasahOperational Curriculum Part 1 3.2 Development of MadrasahOperational Curriculum Part 2 3.3 Learning the MerdekaCurriculum in Madrasah Part 1 3.4 Learning the MerdekaCurriculum in Madrasah Part 2 3.5 Learning Achievements –Learning Objectives – Learning Objectives Flowof PAI and Arabic in Madrasah 3.6 Assessment and Evaluation of the Merdeka Curriculumin Madrasah art 1 3.7 Assessment and Assessment of the Merdeka Curriculum in Madrasah Part 2 3.8 Assessment and Assessment of the Merdeka Curriculum in Madrasah Part 3 3.9 Project Development of Pancasila Student Profiles and Rahmatan Lil Alamin Student Profiles in Madrasah Part 1 3.10 Project Development of Pancasila Student Profiles and Rahmatan Lil Alamin Student Profiles in Madrasah Part 2 3.11 Development of Arabic Teaching Modules/RPP

MOOC-PINTAR Design

Generally, the MOOC-PINTAR design consists of delivering material through video recordings, assessment through questions in the form of multiple choice of each material that has practice questions, and final assessment through exam questions at the end of the training. PINTAR also provides learning modules or reading materials that contain training materials in pdf and PowerPoint formats. New features have been added since the sixth training with training material on Scientific Writing for Penghulu and Extension which will be held from 21 December 2022 to 26 December 2022. In this training, there is a feature to join the telegram group as a place to discuss and share post-training information.

All PINTAR assessments apply a passing grade with a score of 60. Participants who pass a passing grade with a minimum score are entitled to a certificate according to the weight of the hours studied in the training after the verification process by the PINTAR team. If the participant fails to obtain the value set by the passing grade, the participant is given the opportunity once to repeat the entire material or only repeat the assessment. Before downloading the certificate of training results, participants were asked to fill out a questionnaire to find out their level of satisfaction with the training.

MOOC-PINTAR Efficiency

Muhtadin explained that efficiency is an important consideration for Pusdiklat in implementing MOOCs through the PINTAR platform. The Institution faced a budget that does not increase, but the target is increasing. Thus, institutions initiated application efficiency through innovation. PINTAR is one of the innovations in organizing training that has succeeded in achieving efficiency of up to hundreds of billions of rupiah. Suyitno, Head of the Religious Moderation and Human Resource Development Agency (BMBPSDM), said that the efficiency of the training budget through the implementation of MOOC-PINTAR reached more than 100 billion rupiahs. This was also corroborated by Mastuki, Head of the Technical Training Center, who explained that the MOOC-PINTAR with the Free Curriculum for Madrasas which was attended by 20,531 participants was a form of real efficiency. If the training of participants with that number is carried out face to face, the cost will reach 115 billion rupiah. However, through PINTAR, training only requires a budget of around 200 million rupiahs (Ministry of Religious Affairs, 2023).

Muhtadin explained, if the average cost of face-to-face training is 170 million for a batch of 30 people, then the cost of face-to-face training is the number of batches of 20,531 participants multiplied by the cost per activity of 170 million, then the required cost is more than 116 billion. But through MOOC- PINTAR, it costs only 833 rupiahs per day for each user. This fee is incurred to rent a cloud from Amazon as a cloud service provider. If the average cost of organizing a MOOC for one participant is 10,000 rupiah, then the MOOC-PINTAR fee for 20,531 participants is 205,310,000 rupiah. organizing a MOOC for one participant is 10,000 rupiah, then the MOOC-PINTAR fee for 20,531 participants is 205,310,000 rupiah.

Discussion

MOOC-PINTAR materials which are limited to knowledge transfer activities, tutorials,

and individual assignments have implications for the scope of increasing competency aspects for teachers. In other words, MOOC-PINTAR only focuses on the cognitive improvement of participants. This can be seen from the assessment implemented in MOOC-PINTAR which only uses tests to assess participants' understanding of the training material. In addition, MOOC- PINTAR also does not apply assignments and assistance to participants. Thus, the implementation of MOOC-PINTAR to increase teacher competence is limited to cognitive aspects.

MOOC-PINTAR adopts models that are inseparable from those classified by Siemens (2013) – one of the founders of MOOC – namely xMOOC, cMOOC, and quasi-MOOC. MOOC is an extension of traditional forms of learning that focus on the transfer of knowledge "from teacher to student" as the main activity. Siemens refers to this process as "knowledge duplication" by participants. Assessment in this model is done automatically. The cMOOC refers to the first MOOC model introduced by Siemens and Downes. The letter "c" refers to connectivist pedagogical which means learning is a form of interaction between individuals, and individuals with networks or information sources (Siemens, 2005; Downes, 2022). The quasi-MOOC is a model that emphasizes providing asynchronous learning resources without offering social interaction like cMOOC or automatic assessment and tutorials as facilitated by xMOOC. According to Siemens, this model is technically not a course but is more accurately referred to as Open Education Resources (OER).

Based on this categorization, there is an effort to transform the MOOC model which is held on the PINTAR platform. In the initial period or the first five courses, MOOC-PINTAR still focuses on learning through the xMOOC model. In this model, MOOC-PINTAR focuses on organizing one-way learning and automation of assessments through multiple choice questions without any interaction features, either between participants and the teacher, or participants with other participants. Furthermore, in the second period, or since the sixth course, MOOC-PINTAR began implementing interaction features for the participants. This is realized by having a link to join the Telegram group. This shows that MOOC-PINTAR is starting to apply connectivism learning (pedagogical connectivism) even though it is not perfect. The existence of the group only appeared at the end of the post-training, and there was no teacher involvement in it. Nonetheless, the transformation of the learning paradigm shows that PINTAR is a growing platform.

PINTAR's focus on efforts to improve teacher competency is also evident from the training materials. Of the total 7 trainings that have been held, there are 6 trainings with 3 themes that focus on improving teacher competency. Multimedia-based learning media training and merdeka curriculum training at madrasas show efforts to increase teacher pedagogic competence. The Classroom Action Research (PTK) training is an effort to increase the professional competence of teachers through the PINTAR platform. The structure of the MOOC material is of course not the final form, considering that PINTAR is still new in organizing MOOCs. The current scope of material at least confirms that the implementation of MOOC through the PINTAR platform supports increasing teacher competency.

In the MOOC, the training design is the part that determines the objectives of the training itself. These objectives then determine the indicators used in determining the quality of training. According to Martin Weller, there are two categories of training designs, namely design for retention and design for selection. In the first design, the number of participants who complete the training or completion rates is an indicator of the quality of the training. As for the second design, the level of completeness of the training is not an indicator of quality. Downes, including those who don't mind the dropout rates of MOOCs. According to him, MOOC is parallel to other information providers such as newspapers. He argued that just because a newspaper doesn't finish reading doesn't mean it's a failure. People who read the newspaper only on the part they want are the same as participants who take MOOC but don't

finish it. Participants are allowed to take the desired part of the training (Weller, 2014).

Referring to Weller's MOOC design category, MOOC-PINTAR implements a design for retention or training that focuses on the mastery of the material based on 3 things. First, participants must follow the training material sequentially. Second, the application of passing grades in training assessments. Each exercise value is an indicator of completeness and a requirement to get a certificate. Third, participants who do not meet the passing grade are allowed to do remedial, namely by following the material again or repeating answering practice questions.

The MOOC-PINTAR design that applies design for retention is relevant to the principle of cost efficiency used. This is because the training design that focuses on completion can optimize the completion rate. Nevertheless, the efficiency is closely related to the effectiveness of training. Considering that the MOOC-PINTAR fee is attached to each participant, the actual training cost efficiency is calculated based on the completion rate, not based on the number of participants taking part in the training as data presented by the Pusdiklat. Thus, the difference between the number of participants who attended the training and the number of participants who passed shows the level of ineffectiveness of the training and cost inefficiency.

Conclusion

The implementation of MOOC-PINTAR in increasing teacher competence applies several principles. First, MOOC-PINTAR facilitates the realization of increasing competency and simultaneously maintaining teacher productivity. This is because MOOC-PINTAR-based asynchronous learning provides time flexibility for participants. Second, MOOC-PINTAR prioritizes time efficiency in delivering training by trimming the competency mapping process that is considered inefficient. Third, MOOC-PINTAR focusses in improving teacher competence focuses especially on cognitive aspects. Fourth, MOOC-PINTAR implements a design for retention that focuses on the mastery of the material with clear indicators in each material through a passing grade. Fifth, MOOC- PINTAR bridges the gap between budget efficiency and fulfilling the right to training for teachers. Sixth, the MOOC-PINTAR material shows efforts to increase teacher pedagogic and professional competence.

Budget efficiency as a target for implementing MOOC-PINTAR which provides asynchronous training in the context of increasing teacher competence is ideally directly proportional to its effectiveness. To study the effectiveness of MOOC-PINTAR, more in-depth further research is needed. This vacancy is expected to be a suggestion for further research to be able to examine the effectiveness of implementing MOOC-based training through the PINTAR platform.

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