“DIGITAL CLASS” ONLINE TRAINING THROUGH MOOC SEAMOLEC

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ABSTRACT

The aim of this research is to reveal whether: 1) know the condition of the training of “Digital Class” for educators and education personnel at SEAMOLEC; 2) undertake the development of training in digital classroom networks through MOOC SEAMOLEC; 3) know the validity and effectiveness of training in a digital classroom network.

Research Development of “Digital Class Online Training” using the ADDIE development model that consists of 5 stages: 1) analysis, current condition of “Digital Class Training”; 2) design, lesson plan of “Digital Class Online Training”, 3) development of text, video and assignment materials and then uploaded to mooc.seamolec.org, 4) implementation, expert review to media content and learning specialists. Small group test to 5 SEAMOLEC online training facilitators, 5) evaluation, field tests to 44 “Digital Class Online Training” participants.

The results concluded that: 1) SEAMOLEC in 2016 serves approximately 3000 "Digital Class" training participants. “Digital Class Online Training” is conducted to meet training demand both in Indonesia and Southeast Asia. 2) the design and development of “Digital Class Online Training” using the ADDIE model. 3) assessment of online training participants overall aspect got score of 5273 with average 119,8 so that “Digital Class Online Training” can be said good. In the pre-test and post-test, the results obtained are tt (5% = 2.02) <te (4.2) and tt (1% = 3.55) <te (4.2). There is an effect of applying the learning model in the network to the understanding of digital class concepts for trainees in a “Digital Class Online Training”.

Keyword: mooc, online training, ICT competency upgrading, educators and education personnel, mooc.seamolec.org, SEAMOLEC

1. INTRODUCTION

The development of distance education experienced a huge change from the early generation in 1728 which only in the form of korespodensi, then to the 5th generation in 1997 in the form of mobile learning by relying on internet connection as a medium of introduction of various multimedia content. Distance education offers the flexibility of learning in different places and times, with a variety of learning resources. Learning model that only see from the development of individual in the form of drill and practice developed into learning which see from group development that is social learning. Social learning is characterized by

learning that is supported by the development of information technology, this learning allows learners to learn in groups with learners who come from different regions. One way of learning is known as learning through MOOC.

MOOC stands for "Massive Open Online Course". In a sense, MOOCs are (1) open and free, (2) courses in the network over the internet, which (3) limited human resources to organize hundreds, thousands and even more course participants by utilizing information and communication technology to support the learning process. In contrast to OERs (Open Educational Resources) who share only and as a forum for delivering materials. MOOC has a function as a supporter of learning, has an evaluation and the participants get a certificate if it has completed the course taken. The minimum requirement of MOOC is learning in network which should be open and free for anyone who wants to learn. The online learning enables greater learning opportunities, is cheaper and can be easily accessed by anyone.

SEAMOLEC is the Southeast Asian Ministers of Education Organization of the Regional Open Learning Center, the Southeast Asian Ministry of Culture focusing on open and distance education and developing SEAMOLEC MOOC. MOOC SEAMOLEC is developed by looking at the need for learning resources that can be accessed by anyone and anytime. One of the training offered in MOOC SEAMOLEC is a ‘Digital Class” training. “Digital Class” training is training on the utilization of information and communication technology especially the utilization of various sources of digital teaching materials, online communication and online evaluation. This training is

intended for participants especially teachers who want to have competence in developing digital class in assisting the learning process that is not limited in a class. Ministry of Education and Culture through Research and Development Agency (R & D Kemendikbud, 2013) revealed that the 21st Century is marked with:

1. information available anywhere and accessible at any time;
2. faster computing;
3. automation that replaces routine jobs; and
4. communication that can be done from anywhere and to anywhere.

The 21st century has only been running for a decade, but in the world of education, there has been a shift, even a fundamental change in the level of philosophy, direction and purpose of education. In this 21st century, education is becoming increasingly important to ensure learners become lifelong learners, skilled learners and innovative. In addition, learners are also expected to be skilled in using technology and information media and can work and survive in facing life's challenges by using life skills that they have. The sign is a cue for educators in order to improve its ability in information and communication technology. Students are facing today is a digital native, learners who since birth are familiar with various digital devices.

The gap in the capability of utilizing information and communication technology by educators and learners must of course be minimized through training. This is in line with the National Education Law No. 20 of 2003 article 3 that the

function of education is to develop the ability and form the character and civilization of a dignified nation in order to educate the nation's life, aims for the development of potential learners to become human beings who believe and cautious to God Almighty, noble, healthy, knowledgeable, capable, creative, independent and become a democratic and responsible citizen. “Digital Class” training enables participants to have competencies that can be useful for their own lives as well as the community.

SEAMOLEC as an organization that has a mission to assist SEAMEO member countries in identifying educational issues and seeking alternative solutions for sustainable human resource development through effective dissemination and utilization of open and distance learning. The implementation of training is one of the efforts offered by SEAMOLEC in the dissemination of competencies and knowledge related to the development of open and distance education. In 2016 SEAMOLEC serves approximately 3000 "Digital Class" trainees (SEAMOLEC Annual Report, 2016). The digital classroom training in the network is done to meet the demand for training both in Indonesia and Southeast Asia. Based on this encourage researchers to conduct this research.

2. METHOD

This research uses research development method (Resesarch and Development) to reach the goal and solve research problem. Research and development method is a research method used to produce a specific product and test the effectiveness of the product (Sugiyono, 2011: 407). Sugiyono (2009: 297) said that to be able to produce a certain product

used research that needs analysis to test the effectiveness of these products in order to function in the wider community, it is necessary research to test the effectiveness of the product.

The development carried out in this research is “Digital Class” online training through mooc.seamolec.org. In this research method will be described the research design from the beginning of the preliminary study to product effectiveness test. This product was developed to be one of the learning tools in improving ICT competence for educators and educational staff.

Table 1. Comparison of SEAMOLEC Training

No	**Aspect**	**F to F Training**	**Online Training using *video conference***	**Online Training through mooc.seamolec.org**
1	Learning Resources	• CD • Flash disk • Gdrive • Text materials	• Gdrive • Text materials	• upload in mooc.seamolec.org • text and video materials
2	Activity	• lecturing • group discussion	• lecturing • digital class implementation	• lecturing • group discussion • digital class implementation

3	Participant	30-60 participants	200 participants, 1 room video conference for 200 participants	Unlimited, learning throug mooc.seamolec.org

The design and development of training in this network using the ADDIE model. In the analysis phase, the participants, context, and materials will be taught and skills needed, including the facilitator. The design stage of this activity is developed and embodied in the Outline of the Digital Class Online Training Program. Development stage developed training materials on the platform in mooc.seamolec. Expert review was then conducted, ie two media and learning experts and two material experts to review the media and the material being developed. Small group evaluation to 5 digital class facilitators to get input from interested parties in developing this product. In the implementation stage to obtain input from a broader party field testing is conducted to the participants of the "Digital Class". Participants attend the "Digital Class" courses available at mooc.seamolec.org. The final stage is evaluation. At this stage the trainees work on the pre-test and post-test to see the effectiveness of the digital classroom training. Training participants are also given a questionnaire to provide input to the implementation of the digital classroom training that has been followed.

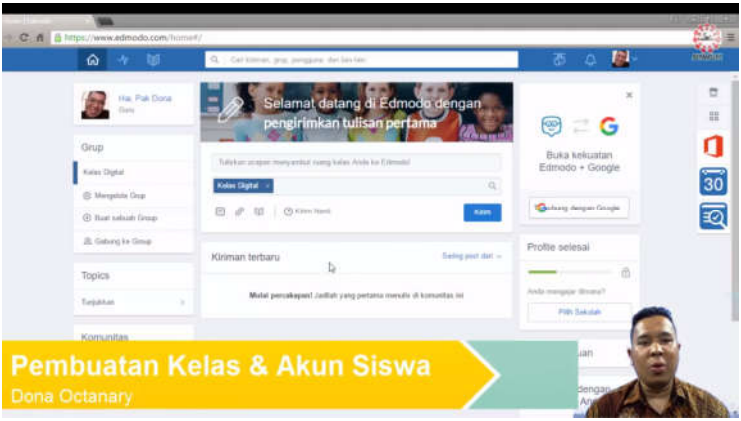

Figure 1. Video Material in mooc.seamolec.org

The results of the experiments that have been done then processed with simple statistics that is by using a simple assessment that is using the scale of numbers 1 to 4 in interpreting the data to qualitative data qualitative use the following references:

Table 2. Rating Score

Category	Score
Very Good	4
Good	3
Fair	2
Poor	1

There are three expert validation assessment instruments: material experts, media experts, small class test and field test to participants. Here are the steps to analyze validation instrument validation data.

Calculate to average score

$$\bar{X} = \frac{\Sigma x}{n}$$

Where:

$\bar{X}$ = average score of each aspect or all aspects

Σx = total score of every aspect or all aspects

n = the number of trainees

Changing the average score into qualitative criteria by referring to the guidance criteria (Eko Putro, 2011: 238)

Table 3. Media Expert Assessment Interval and Material Expert

Score Rating	Criteria
X > Mi + 1,5 Sbi	Very Good
Mi < X ≤ Mi + 1,5 Sbi	Good
Mi - 1,5 Sbi < X ≤ Mi	Fair
X ≤ Mi - 1,5 Sbi	Poor

Where,

Mi (mean ideal) = ½ x (highest score + lowest score)

Sbi (ideal standard deviation) =½ x (highest score-lowest score)

Assessment of the effectiveness of training in the network by analyzing the results of pre-test and post-test given to trainees in the network. Pre-test and post-test

were given to 44 trainees in a digital classroom network. Understanding the analysis according to Moleong is the process of organizing and sorting data into patterns, categories, and units of basic descriptions so that the theme can be found and can formulate working hypotheses as suggested by the data.

Analyzing the data is a very critical step in the research. Analysis of research data aims to narrow and limit inventions to become data that is regular, structured, and more meaningful. As already known in the discussion of data, that the data that the author uses is quantitative data. Quantitative data analysis is done by using statistical analysis to calculate data from field. The quantitative data is the author of the analysis by using statistics with the formula t-Test as follows:

$$t - test = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left[\frac{SD_1^2}{N_1 - 1}\right] + \left[\frac{SD_2^2}{N_2 - 1}\right]}}$$

Where,

$\bar{X}_1$ = *Mean on post-test result distribution*

$\bar{X}_2$ = *Mean on the value distribution of pre-test results*

SD_1^2 = *The value of variant on the distribution of post-test results*

SD_2^2 = *The variance value of the pre-test results distribution*

N_1 = *Number of individuals on post-test*

N_2 = *Number of individuals on pre-test*

Basic level of significance of 5% and 1%, can be seen on the distribution table t

3. RESULT AND DISCUSSION

Testing the quality and effectiveness of the training in the digital classroom network test product draft to two material experts with the results of the expert material assessment to get the total score of 204 with an average score of 102 so that included in the criteria, the material developed very well. Two learning and media experts also conducted an assessment with the results of the expert assessment of the media and the media got a score of 171 with an average of 85.5 so that entry in the criteria of learning and media in training in a network of digital classes developed can be said very well. Then a small group trial was conducted to five training facilitators in the network who were SEAMOLEC appointed teachers. Then tested the product to 44 participants. Based on the assessment of the digital class participants, all aspects get a score of 5273 with an average of 119.8 so that the learning of digital class in the network can be said good.

The results of a draft product trial from a material expert

The following is the result of the material feasibility assessment from the view of the material expert as a whole:

Table 4. Material Feasibility Test by Material Expert

Aspect of Assessment	Material Expert Assessment		
	Total score	**Average Score**	**Criteria**
Learning	81	40,5	Very Good
Material	88	44	Very Good
Benefit	35	17,5	Very Good
Total Score	204	102	Very Good

The material feasibility test by the material expert earned a score of 81 with an average score of 40.5 based on the learning aspect. Based on the material aspect, get the total score of 88 with the average score of 44. Based on the benefits aspect, get the total score of 35 with an average score of 17.5. Based on the overall aspect of the study, getting the total score of 204 with an average score of 102 so that included in the criteria of the material developed very well. The results of a draft trial of products by learning and media experts

Table 5. Material Feasibility Test by Media Expert

Aspect of Assessment	Assessment of the Learning and Media Expert		
	Total score	**Average Score**	**Criteria**
Planning	30	15	Very Good
Learning Guide	22	11	Very Good
Material	31	15,5	Very Good
Delivery Strategy	42	21	Very Good

Evaluation Development	12	6	Good
Learning Environment	34	17	Very Good
Total Score	171	85,5	Very Good

The material feasibility test by the learning and media experts earns a score of 30 with an average score of 15 based on the planning aspect. Based on the material aspect, get the number of scores of 88 with an average score of 44. Based on the learning guide, get the number of scores of 22 with an average score of 11. Based on the overall material get a total score of 31 with an average score of 15.5. On the delivery strategy aspect gets a score of 42 with an average of 21. Then gets a score of 12 with an average of 6 on aspects of evaluation development. In the design aspect of the learning environment got a score of 34 with an average of 17. The overall aspect got a score of 171 with an average of 85.5 so that included in the criteria of learning and media in training in the developed digital class network can be said very well.

Table 6. Small Group Product Trial Results

Aspect of Assessment	**Small Group Assessment**		
	Total score	**Average Score**	**Criteria**
Training Planning in Digital Class Online Training	69	13,8	Very Good
Learning Guide	51	10,2	Very Good
Organizing Module Material	82	16.4	Very Good

Evaluation Development	35	7	Very Good
Learning Environment Design	78	14,2	Very Good
Quality of Teaching Materials	59	11,8	Very Good
Video Conference Quality received by the Participant	50	10	Very Good
Material Delivery	107	21,6	Very Good
Benefits	19	3,8	Very Good
Total Score	550	110	Very Good

Table 7. Results of Product Assessment of Training in Digital Class Online Training by Participants

Aspect of Assessment	**Field Test Assessment**		
	Total score	**Average Score**	**Criteria**
Training Planning in Digital Class Online Training	553	12.5	Good
Learning Guide	416	9.4	Good
Organizing Module Material	677	15.3	Good
Evaluation Development	265	6	Good
Learning Environment Design	667	15.1	Good
Quality of Teaching Materials	384	8.7	Good

Video Conference Quality received by the Participant	365	8.2	Good
Mentor in Online Assistance	806	18.3	Good
Material Delivery	809	18.3	Good
Benefits	331	7.5	Very Good
Total Score	5273	119,8	Good

Product test by trainees get the total score of 553 with an average score of 12.5 based on the planning aspect. Based on the aspects of the study guide, get the score of 416 with an average score of 9.4. Based on the organizing of the module, get the total score of 677 with an average score of 15.3. In the aspect of development evaluation got score 265 with average 6. Aspect of design of learning environment got score 667 with average 15,1. Then on the aspect of the quality of the material got a score of 384 with an average of 8.7. Based on the aspect of video conference reception got a score of 365 with an average of 8.2. In the aspect of mentoring by the mentor got a score of 806 with an average of 18.3. The material delivery aspect scored 809 with an average of 18.3. On the aspect of benefit got a score of 331 with an average of 7.5. The overall aspect got a score of 5273 with an average of 119.8 so that the learning of digital class in the network can be said good.

See if there is an impact on the trainees after training in the network by providing pre-test and post-test. In the pre-test and post-test the results obtained are tt (5% = 2.02) <te (4.2) and tt (1% = 3.55) <te (4.2). Thus te (t empirik) is greater than

indigo tt (t theoritical) either at a significant level of 5% or at a significant level of 1%. Based on the results of this data analysis can be concluded that there is influence of application of learning model in network to understanding digital class concept for trainee in digital class network.

4. Conclusion and Sugesstion.

The digital classroom training implemented by SEAMOLEC in the form of face-to-face. Face-to-face training only reaches a limited number of participants and territories. Then SEAMOLEC develops synchronous network training using video conferencing but the disadvantages of synchronous models using video conferencing are instructors and participants must follow a predetermined schedule, participants depend on the quality of the instructor, the participants are not getting individual attention from the instructor, and the learning speed is determined by instructor is not a participant. This learning will be effective if the material is prepared as well as in the form of asynchronous so that the trainees can repeat the material delivered and can arrange the time to learn it. Researchers develop training in the network with the title of "Digital Class" training through mooc.seamolec.org. This development is done for educators and education personnel. Training in this network can be followed anytime and anywhere during memiki devices connected to the internet network.

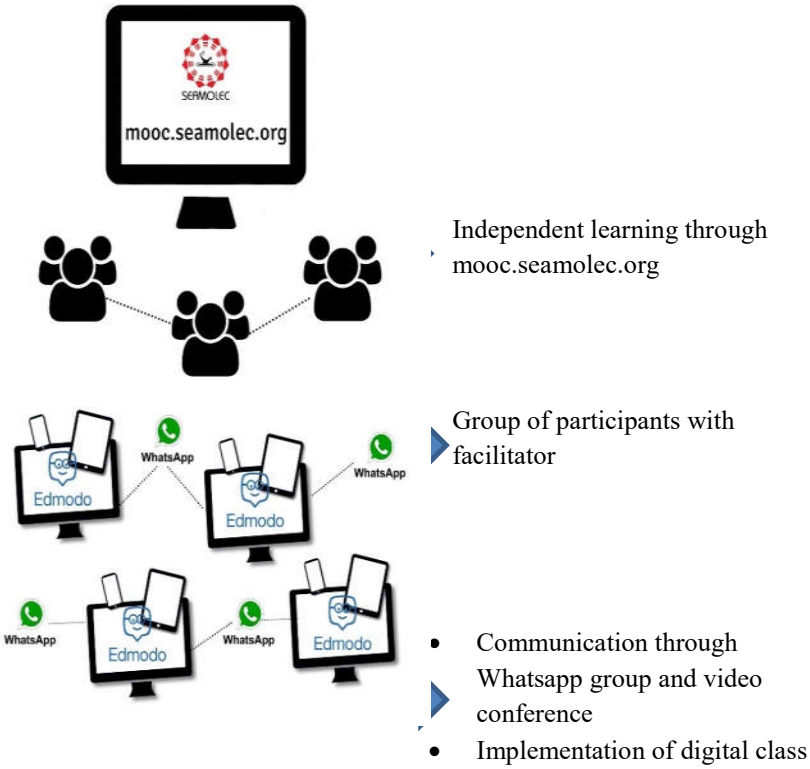

Figure 2. Implementation on Digital Class Online Training

The design and development of training in this network using the ADDIE model. In the analysis phase, the participants, context, and materials will be taught and skills needed, including the facilitator. The design stage of this activity is developed and embodied in the Outline of the Digital Classroom Online Training Program. Development stage developed training materials on the platform in mooc.seamolec network. Experiment review was then conducted, ie two media and learning experts and two

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The implications based on the development outcomes made through training in a digital classroom network are

1. Improved professionalism of educators and education personnel can be done widely and effectively through mooc.
2. Participants of training can improve competence in integrating ICT in learning one of them through social learning network Edmodo.
3. Online training can be followed by trainees from anywhere and anytime through a device connected to the Internet network.
4. The level of completion of learning through mooc is still low.
5. Online training through mooc interest by many educators and education personnel.

Suggestions for the development of training in the network through mooc are:

1. SEAMOLEC will collaborate with various institutions to improve the professionalism of educators and education personnel through open and distance education, one of which utilizes mooc.seamolec.org.
2. Educators and education personnel are expected to continue to improve ICT literacy skills in accordance with one of the 21st Century Skills
3. The need for increased infrastructure in the provision of internet connection at an affordable cost.
4. Learning strategies are needed to keep participants motivated to complete the training.
5. Online training with various other competencies need to be developed.

REFERENCES

Azhari, Arsyad, *Media Pembelajaran*. Jakarta: PT. Raja Grafindo Persada, 2002.

Aris Suherman dan Ondi Saondi (2010) *Etika Profesi Keguruan* Bandung: PT Refika Aditama

Arifin, Barnawi dan M.2014. *Manajemen Sarana dan Prasarana Sekolah*.Yogyakarta: Ar-ruzz Media.

B. Seels, Barbara, dan Rita C. Richey. *Teknologi Pembelajaran, Definisi dan Kawasannya.* Jakarta: Universitas Negeri Jakarta, 1994.

Lever-Duffy, McDonald, Mizell*. Teaching and Learning with Technology* .Pearson Education, Inc. 2003.

Prawiradilaga, Dewi Salma dan Eveline Siregar, *Mozaik Teknologi Pendidikan*.. Jakarta: Prenada Media, 2004.

Prawiradilaga, Dewi Salma. *Modul Wawasan Teknologi Pendidikan.* Jakarta: FKIP Universitas Terbuka, 1999.

Pribadi, Benny. A dan Yuni Katrin. *Media Teknologi.* Jakarta: Universitas Terbuka, 2004.

Purwanto. *Pengembangan Model Pembelajaran Berbasis Teknologi Komunikasi dan Informasi untuk Pendidikan Dasar*

dan Menengah. Seminar Nasional Teknologi Pembelajaran. Jakarta: 1-2 Desember 2004.

Sadiman, Arief. S, *Media Pendidikan: Pengertian , Pengembangan dan Pemanfaatannya*. Jakarta: Pustekkom Dikbud dan PT. Raja Grafindo Persada, 2003.

Sharon E. Smaldino et,all*. Instructional Technology and Media for Learning*. Pearson Education, Inc. 2005