Adaptation Pattern on Information Technology Fusion at Universitas Negeri Malang in Implementing the Life Based Learning

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Abstract: Adaptation patterns are conducted in life based learning to facilitate the implementation of Tran's disciplinary implementation. Learning Management System and Massive Open Online Courses applied in learning is an IT Fusion in learning innovation. IT Fusion Stages are 1) Analysis; 2) Development Plan; 3) System Development; 4) Testing and Implementation; 5) Formative Evaluation. Comprehensive adaptation conducted by the Universitas Negeri Malang has answered the doubts about LMS and MOOC technology combined in learning.

1 INTRODUCTION

In 2008, the Universitas Negeri Malang has built online technology allowing one of the learning innovations that facilitate learning. The opportunity of learning through online technology is simply to build a learning resource that allows many people to access learning opportunities that are usually unlikely to happen or occur (Weise & Christensen, 2014). The emergence of the Massive Open Online Courses (MOOC) has recently been a major step forward for education. Hundreds of thousands of users access this online learning platform, with thousands of enrolees in each MOOC and academic offerings from some of the world's most prestigious universities. Universitas Negeri Malang in learning service requires consideration of its development.

Universitas Negeri Malang has been using Life Based Learning (LBL) as the foundation of philosophy of learning. LBL is an identical activity of open source access learning pattern. The use of the term LBL, has consequences for the development of a wealth of abundant learning resources, so that the term open learning is one of the LBL patterns. Assumptions and some premises underlying the explanation of LBL. LBL is an open and flexible learning and open attitude about teaching and learning practice (Rodriguez, 2012). Despite rapid development, the Universitas Negeri Malang needs to establish a system of 1) open licensing of access to learning resources; 2) providing open access to

learning provided by the Universitas Negeri Malang; and 3) development of open platforms compatible with the device (many with commercial LMS software).

The logging of open access learning studies has developed significantly. Research on open education evolves in two different directions: 1) open education resources (OER) (Veletsianos, 2013; Abramovich and McBride, 2018; Moyle, 2018; Walji and Hodgkinson-Williams, 2018). In general, the basic vision of the development is to improve accessibility to learning on a global scale. The OER study has a focus on how to produce and publish learning resources with open licenses. On a micro scale, these developments are not accompanied by thinking on educational institutions. As well as how an institution adapts to the development of OER in a new context including student psycho-social factors and users that influence the use of OER. For MOOC and open lectures, the most prominent research challenges are related to feedback scalability and support, open lecture education design, and new integration.

Successful development of LBL is a form of learning with constructivism paradigm. Collaboration is an implementation of learning model on LBL. Collaboration like learners is a major activity in open learning (Fu and Hwang, 2018; Hämäläinen, Lanz and Koskinen, 2018; Sung and Hwang, 2018). Studies by (Khalil and Ebner, 2017) discuss collaborative learning groups in the MOOC. Based on a brief overview of the MOOC-related clustering approach (groupings based on content and users), the

researchers introduced the results of an exploratory study conducted on a MOOC offered to a local student population and at the same time can be followed by users from around the world. Universitas Negeri Malang in adapting requires a pattern of learning development that utilizes OER in MOOC as a service model.

Continuous innovation in learning is a favourable condition for open learning. MOOC presentation form is the right choice. MOOC in its use is a learning environment that facilitates in generating new ideas for students. (Leach and Hadi, 2017) focuses on user research to explore new categories to appreciate learning behaviours and use of badges (symbols / icons) in visualizing learners' subcontracts in the MOOC. Another new idea is in Research by (Pappas, Giannakos and Mikalef, 2017) exploring the evaluation of tasks with video. According to the study, this type of task is highly relevant if it is done outside the test period (ie only a structured task rather than a UTS or UAS). In addition, this study highlights the role of emotion in relation to the learner's acceptance of the task burden. Despite the research, some findings need to be sharpened by the practical development of how future design practices of institutions including the Universitas Negeri Malang are able to construct ideas and embed any ideas of thought in open learning.

Information Technology fusion in learning is the terminology of Educational Technology (Richey, 2013). Some of the new terms in the terminology are LMS and MOOC. Neither in the Universitas Negeri Malang or any other MOOC still not get the same position with the LMS. This means that LMS is still viewed as an official system or simply approached with xMOOC (Kennedy, 2014). Although the MOOC is still in debate, it is undeniable that the

MOOC has gained recognition and good response. In 2011 the MOOC on Introduction to Artificial Intelligence, run by Sebastian Thrun and Peter Norvig at Stanford University, reached 160,000 registrations (Rodriguez, 2012). The availability of MOOCs has since grown rapidly, with over 4200 being released by the end of 2015 (Shah, 2015). So the adaptation of Universitas Negeri Malang is to build the MOOC which is integrated with LMS.

The development of IT Fusion is intended to provide a contextual overview and LBL system that must be done by the Universitas Negeri Malang. LBL systematically forced Malang State University to adapt and develop innovative learning. Concrete adaptation, needs to be done by developing innovative learning systems. IT fusion in LBL needs to be adapted by incorporating technology in the learning system to be able to be applied trans disciplinary so as to strengthen the capability of students in Universitas Negeri Malang.

2 DEVELOPMENT METHODS

The development of IT fusion at Universitas Negeri Malang through the phases that are tailored to the characteristics of the development of OER and OEP learning. The pattern of learning development undertaken is the development of IT LBL fusion with the main characteristic of On-line web-based activities shown in Figure 1. Stages of OER and OEP development in Life-Based Learning through MOOC loading. As a form of Transdisplinary inter-department using other stages: 1). Analysis; 2). Development Plan; 3) System Development; 4) Testing and Implementation; 5) Formative Evaluation. Pattern development is a way to describe the process. But in the field activities made context-based adjustments.
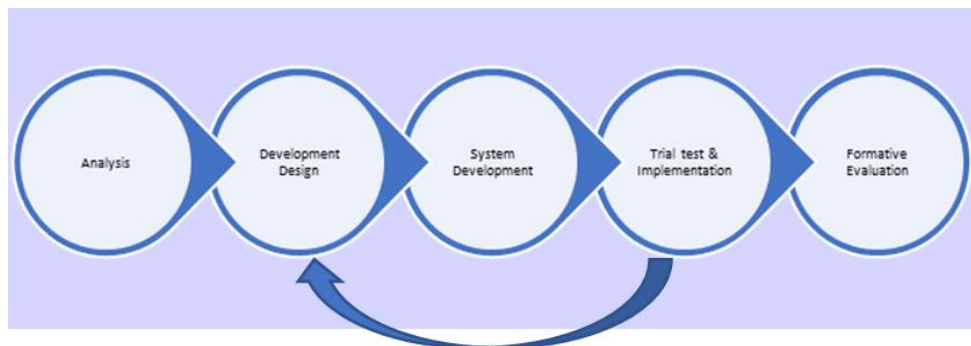

Figure 1: System development patterns.

2.1 Analysis

Analysis is done by looking at the institutional readiness to the technical ground. Observation is done by looking at 1) some policies, 2) learning implementation system, 3) Student activity pattern and lecturer in open learning.

2.2 Development Plan

The design of development is based on 1) What are the possible learning patterns in Malang State University, 2) The layout pattern that is able to increase the learning activity, 3. The assessment pattern that can be implemented in the LBL system

2.3 System Development

System development is done by 1) Selection of LMS and MOOC platform, 2) Initiation of hardware and software support capabilities, 3) Development of learning content, 4) Fusion IT by synchronizing software and hardware.

2.4 Trial and Implementation

Testing is done by doing a series of activities. The testing activities were conducted in the laboratory and the server centre of Education Technology Department of Universitas Negeri Malang. Testing is done to test 1) the stability of software that has been installed in the server, 2) the speed of software in responding to access. Implementation is done by 1) uploading learning content, 2) Setting the learning pattern.

2.5 Formative Evaluation

Formative evaluation is done by looking at 1) collaboration activities on LMS and MOOC, and 2) student learning outcomes during LBL learning followed. Formative evaluation is not final, but it leads to the improvement of learning patterns.
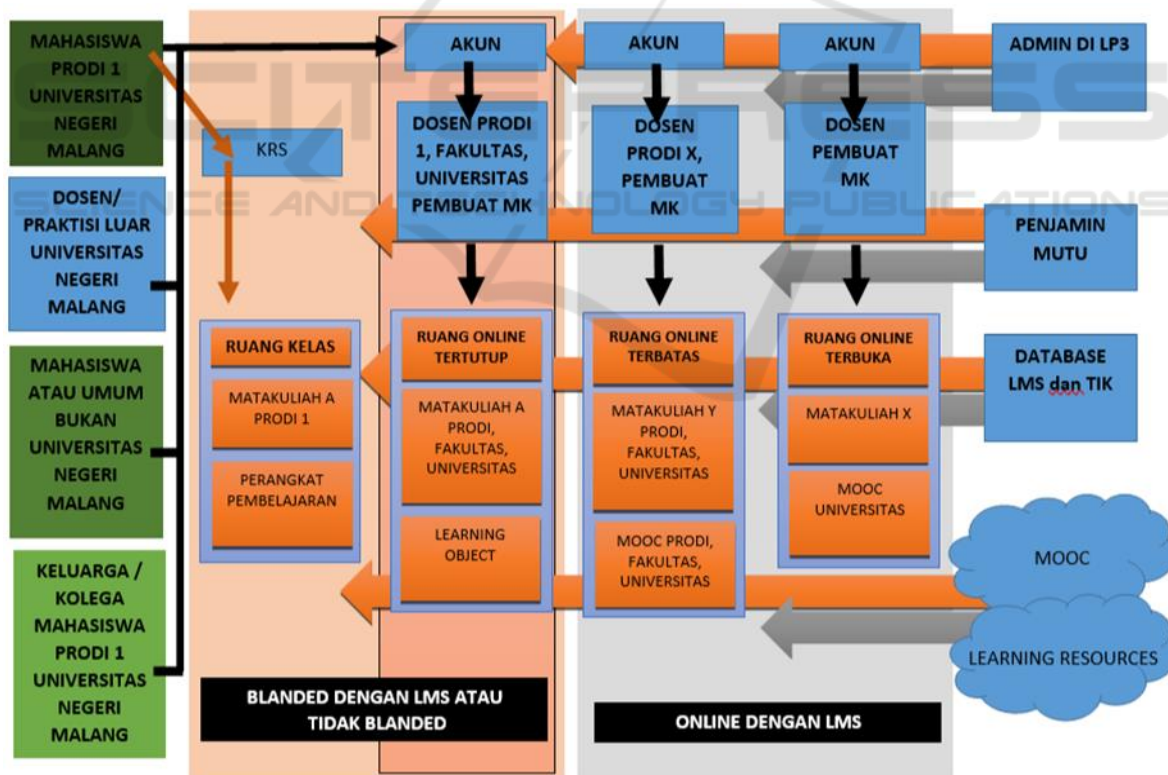

Figure 2: Ecological patterns of IT fusion in LBL.

3 RESULTS AND DISCUSSION

Universitas Negeri Malang has adaptation with LBL learning pattern. LBL learning pattern is designed with LBL context of students and lecturers. The ecological pattern that emerged in the meeting agreed with some lecturers of system experts was the ecology of Fusion IT showed in Figure 2. Students with several lecturers have agreed that LMS and MOOC need to strengthen user insights. The strengthening of ecology is a sharpening of scientific awareness that MOOC is a form of learning innovation with the potential to revolutionize and transform learning (Adams *et al.*, 2014; Kennedy, 2014). The success of social interaction within MOOC has emerged alongside open learning (open source and open source software) (García-Peñalvo, Fidalgo-Blanco and Sein-Echaluce, 2018; Martin-Fernandez *et al.*, 2018). New ideas emerging in lesson activities promise medium-term consequences such as models of reasoning for universities using Trans disciplinary.

Students and lecturers interpret the pattern of LMS and MOOC with unique thinking. In the lesson plan agree that subject can be offered open learning or MOOC. MOOC display was developed with the construction of a course in LMS can be seen in Figure 3.. Adaptation of the pattern of content shows that lecturers at the Universitas Negeri Malang have made a leap of LBL learning technology, but the lecturer considers the open LMS is a MOOC in IT fusion. The meaning of MOOC and LMS is a form of gradual adaptation in the learning process (García-Peñalvo, Fidalgo-Blanco and Sein-Echaluce, 2018; Sheshasaayee and Bee, 2018). The reason for offering MOOC containing LMS is a form of adaptation to LBL learning. Some of the things that need attention are the implementation of LBL learning patterns are 1) MOOC user ability in LBL meaning, 20 accessibility and reach, 3) continuity of blended LMS research and MOOC online, and 4) how to enter the pleasure to teach and try and obtain new ideas in online learning.

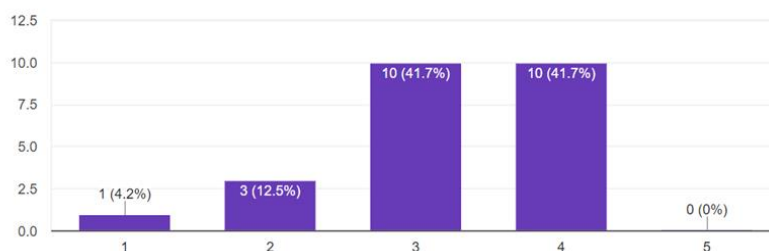Figure 3: Patterns of LMS developed in MOOC.

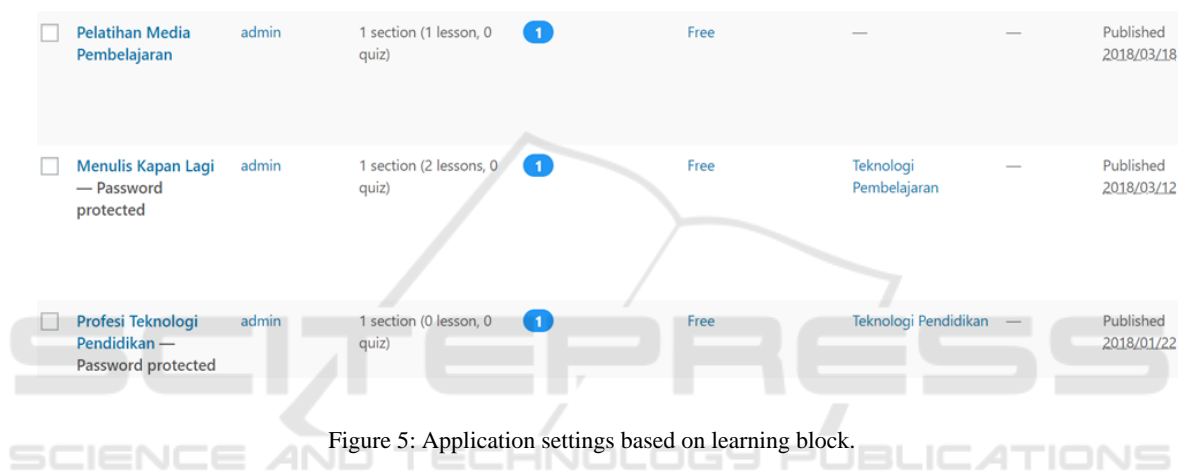Figure 4: One of the MOOC content assessment results by students.

Figure 5: Application settings based on learning block.

Students have the courage to do a direct assessment of some of the content offered shown in Figure 4. This indicates that the student has sensitivity in the assessment of learning. Students look enthusiastic in following the learning. The highest rating is in the range 3 to 4 on scale 5. Assessments 3 and 4 of about 41.7% indicate trust and confidence in the pattern of technical aspects of online-based learning. Other studies also indicate the most robust pattern of MOOCs use. Many assumptions and predictions are offered about the user and what the user might achieve. Some predictions about the end of higher education (Kolowich, 2013) are the ease and belief of digital education for users, even for those with special needs (Coughlan, 2014) the absorption of online learning has increased (Opara-Martins, Sahandi and Tian, 2014; Baxter, Callaghan and McAvoy, 2018; Geiger *et al.*, 2018).

At first, it was clear that the design of the MOOC was very different from designing an LMS at a lecture at the Universitas Negeri Malang. This view is in line with how to design open material for unknown users (Macleod *et al.*, no date). Adaptation is done when the

lecturer design any lecture, must have several groups of students. The adaptation is seen for S-1 level users at Universitas Negeri Malang and Level S-2. When the Department of Education Technology Universitas Negeri Malang create the first MOOC in 2017. Adaptation patterns can also be done for the Universitas Negeri Malang. So what needs to be done is to put the LMS pattern on the MOOC without taking into account the number of users. No need to be debated again "who is the user of tens of thousands of people who will be enrolling for short, free study in an online open lecture that no longer offers qualification or credit". Learning pattern is what the user wants.

An adaptation pattern is technically a web management needs to be done to ensure the layout and content remains the best. Admin needs to make settings based on an interesting learning design shown in Figure 5. The digital learning environment of MOOC and LMS is a major factor of learning comfort (Praherdhiono, 2014; Praherdhiono and Pramono Adi, 2017). Good and professional management needs to be adapted. This is because

there are many doubts about MOOC and LMS. Low MOOC completion rates, difficulties in verifying participant identity, low eligibility and low quality of education resources (Bartolomé and Steffens, 2011; Zapata-Ros, 2015). The low success of MOOC and LMS lies in the absence of clear development standards and pedagogical models in the types of learning MOOC and LMS (Guàrdia, Maina and Sangrà, 2013; Aceto *et al.*, 2014). In this case, technological adaptation should see a pedagogical quality indicator on MOOC and LMS technologies as IT Fusion. So that the pattern of technological adaptation should be comprehensive and include a 1) pedagogical approach, 2) learning activities, 3) evaluation, 4) user experience, 5) motivation and 6) resources (de la Garza, Sancho-Vinuesa and Zermeño, 2015).

4 CONCLUSION

Pattern of technology adaptation is a strategic step in realizing IT Fusion. The success of IT fusion is the success of developing the capabilities of learners. The IT fusion in LBL applied in MOOC and LMS needs to be adapted before being applied to the trans-discipliner curriculum. Innovation is the ease of learning activities through LMS technology that opened into MOOC. Another pattern of adaptation is web-based learning into learning and learning activities that require policy support. Open learning with student innovations. Learning materials developed can be OER and OEP. The novelty of the adaptation pattern on LMS and MOOC is to create MOOC connections built by lecturers and learners by making LBL content connections. The LMS and MOOC content will have unlimited connections and are related to each other.

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