The impact of e-learning towards students’ activity at the department of primary education, Syiah Kuala University

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Abstract. The rapid development of technology leads to more demands and innovation that must be conducted by learners, especially teacher educators. One of the innovation that can be applied in higher education is e-learning. E-learning enables students to study the materials without space and time constraint. This article discussed the impact of e-learning on the activities of bachelor of primary education students in the teacher training and education faculty of Syiah Kuala University. This qualitative study employed action research approach based on lesson study, conducted in three cycles with three main stages of lesson study in each cycle (plan, do, and see). The research subjects were 30 bachelor of primary education students enrolled in the course of learning plan. Data collection was conducted by observation and questionnaire. Data analysis involved descriptive analysis and the percentage formula for the questionnaire. The results showed that student activities steadily increased in each cycle, as indicated by the average score in cycle 1 (Mean = 4), cycle 2 (Mean = 4.25) and cycle 3 (Mean = 4.41). Therefore, it can be concluded that e-learning has a positive impact on the learning. This finding indicates that eLearning is advantageous for student learning.

1. Introduction
The industrial revolution era where we are currently in has influenced many aspects of life, including education. In accordance with the regulations issued by the Indonesian government, educators, both teachers and lecturers are required to adapt to up-to-date technology so that the learning process would be more innovative and creative. Warsita stated that the primary goal of learning technology is to solve learning problems. The use of technology in education, named as e-learning, has a positive impact on students' learning process and learning results [1]. Argued that the use of e-learning enables students to spend more on the online activities or interact with the LMS. Concerning the rapid development of technology, there are several demands of innovation that should be done by educators, especially by lecturers in an educational institution. Currently, higher education learning needs some innovation in improving students' knowledge and experience. One of the innovations in higher education is by implementing e-learning. The e-learning implementation is expected to enhance students' understanding of the subject matters. The use of ICT has the potential to open opportunities for new ways of doing things, thus developing creativity in learning. Furthermore, ICT use is associated with creativity. Therefore, the use of ICT can support the development
of public policy for educational change that promotes creative and innovative school and university environment [2].

Syiah Kuala University has already established the Learning Management System (LMS), which can be accessed at www.elearning.unsyiah.ac.id. However, there are not many lecturers who have applied e-learning, including in Primary Education Department. In this study, the researcher implemented the e-learning in the "Lesson Plan" course. The Lesson Plan course had been delivered using a conventional method. However, the learning was monotone; students tended to wait for lecturers’ instruction, especially regarding the use of learning resources and other references through the library or the internet. Based on the researcher's observation, the conventional method was ineffective for the students. Only several students actively responded when the lecturers asked them to find some learning resources. However, the course requires students to have various references which can help them to arrange their lesson plan and implement it in their future school.

The e-learning program can help students to learn the learning material anytime and anywhere since the lecturers have uploaded the learning material into the e-learning system. The students can download the learning materials (module, power point presentation, and video) as well as assignments beforehand. has defined active interaction in online learning activities including the types of interaction between the learner -self, learner-learner, learner-instructor, learner -content, and learner interface [3]. The learning activities in the course is a combination of interactions between the subjects involved in the teaching and learning activities, including student-content, student-instructor, and student-student interaction. It will also help students to discuss either their individual or group assignments in the system. Furthermore, revealed that “e-learning improves students’ independence and self-efficacy” [4]. The students could discuss through the discussion and chatting platform. Based on the usability test, the eLearn@USM is found to be a medium for online interaction with some features such as downloading information and the ease of communication among students and lecturers” [5]. Previous research result about The study assessed the impact of electronic learning on academic performance in Saudi Arabia. Precisely, we evaluated the influence of web-based learning on academic staff at the King Khalid University (Nahari). As well as the results of research conducted by Owino S about The impact of e-learning on academic performance. The study relates to a level one undergraduate module delivered using traditional lectures and elearning based. Therefore this research is more focused on increasing student activity in learning e-learning.

The researcher's experience using e-learning in teaching showed that the students were enthusiastic in the learning process. It was indicated by their responds and participation during face-to-face or online meeting. Thus, the researcher has a desire to deeply study the impact of e-learning on students' activity at the Primary Education Department at the University of Syiah Kuala.

2. Method
The research was conducted at the Primary Education Department, Faculty of Teacher Training and Education at Syiah Kuala University. The subject was 30 students. The data collection took place in the second semester of the 2018/2019 academic year. This research is a qualitative research, spesifically action research. It was conducted in three cycles with three stages in each cycle: (1) Plan, (2) Do, and (3) See. Lesson study is a way to improve the quality of learning by doing simultaneous activities which can be named by cycles [6].

The followings are the steps to conduct the research:
1. Plan. The plan stage aims to produce a good lesson plan, which is expected to improve students' active participation during the learning process. In this step, lecturer and team collaborated to create a lesson plan, including teaching materials, learning models, and learning aids.
2. Do. In this stage, the researcher acted as a model lecturer to implement the lesson plan. However, the other member of the team was as an observer who would collect some data during the learning process.
3. See. The reflection or see step was done to discuss problems raised during the learning process and find the solution to solve the problems. The reflection activities were begun with self-reflection by the model lecturer and continued by the reflection of the observer. The result of the reflection was used as a consideration for creating the next lesson plan.

The learning materials were developed using Blended Learning Model, a mixed of face-to-face and online meeting. Students could download the materials through an online platform and learn with their peers as well as discuss it through the discussion forum. If the students faced difficulties in understanding the learning materials, they could use the chatting platform as communication tools. Students' assignments and learning summary could also be submitted online for each topic of learning. Besides, in a face-to-face meeting, students would discuss the learning material supervised by the lecturer and then did the worksheets in a group. The worksheet format and learning module had been uploaded in the online platform beforehand, so it would be easy for students to understand the instruction of assignments. Furthermore, students' time to work on the worksheet would be efficient since they have prepared the worksheet beforehand. Next, students presented their discussion results, and the lecturer did scaffolding towards students' presentation. The students wrote a summary for every topic of learning based on the format uploaded at the online platform. This summary should be submitted through the online platform a day before the face-to-face meeting so that the students could understand the learning material deeply. Ten minutes before the class was over, students would do an online quiz. Figure 1 displays the e-learning for each topic of learning.

The module of topic 3
Module 3 explains the types of strategies, identifies the considerations for determining the learning strategy, set the general principles of strategy use, and how to determine the strategy following the competence to be achieved. For detail information, please read and understand the content of this module. Each module is equipped with the steps of activities. If you do not learn it in detail, it will negatively impact your learning preparation. To increase your understanding of this topic, please read the relevant books.

The slides of topic 3
Describing the types and determination of the appropriate strategy, according to basic competence. As usual, the first slide is accompanied by the questions that are related to the topic to learn. The powerpoint slide can help students in understanding the topic to be described.

The Video of Topic 3
Summary of Topic 3 Video
Please make a summary or conclusion based on the video that you watched. The conclusion should not be more than 200 words.

Quiz of topic 3
Please take the online quiz for 10 minutes

Figure 1. E-learning display for each topic of learning.
The participants of this research were 30 students who enrolled in the Lesson Plan Course for the second semester of the 2018/2019 academic year at the Primary Education Department in the Teacher Training and Education Faculty, the University of Syiah Kuala. Data collection method in this research involved observation and questionnaire. The descriptive method was used for data analysis, while the questionnaires were analysed by the percentage formula. The observation was conducted using a checklist. The observation recorded the lecturer's activities and the scores were 5 (Very Good), 4 (Good), 3 (moderate), 2 (fair) and 1 (poor) [7].

3. Result and discussion

This lesson study was carried out in three cycles with each cycle started with stages plan, do, and see. The followings is the short description regarding the learning activities for each meeting.

3.1 Cycle I

In the plan stage, the model lecturer and the team discussed the action plan to enhance students' activity in the course using e-learning model, such as preparing the learning materials, worksheet, and learning media. The do stage in the first cycle was in the form of analysing students' prior knowledge. A model lecturer conducted teaching process, while the observer took notes of all related activities based on the observation sheet. At the face-to-face meeting, the lecturer started the learning process by brainstorming activities, and the students seem enthusiastic in responding to each question. The lecturer then explained some difficult learning materials. Students had studied most of the materials a week before the face-to-face meeting through LMS online platform of the University of Syiah Kuala in the form of a module, powerpoint presentation, and learning video. Furthermore, the students did the worksheet based on the instruction in the module, presented the results, and answered some questions. The observation results for the first cycle can be seen in the following table.

Table 1. The observation result for the first cycle 1

| No | Indicator                                              | Score |
|----|--------------------------------------------------------|-------|
| 1  | The lecturer conducts student-centered learning         | 4.5   |
| 2  | Student-student interaction                            | 4     |
| 3  | Student-lecturer interaction                           | 4     |
| 4  | Student-learning material interaction                   | 4     |
| 5  | Students are actively involved in the learning process (listen/ask/respond) | 4     |
| 6  | Students draw conclusion                               | 3.5   |
|    | Total                                                  | 24    |
|    | Average                                                | 4     |

Based on the observation, it could be stated that the lecturer conducted Student-Centered Learning (SCL) with an average of 4.5, which was in the good category. The student-student interaction, student-lecturer interaction, and student-learning material interaction were also in the good category. Overall, the students' activity was in the good category. The see stage was done after the learning process. The lecturer and observer discussed the phenomena occurred during the learning process. The flaws found in cycle I was that the lecturer's time management was not proper, so the next cycles required some improvements. The lecturer did not need to do a lengthy introduction since the students had learned the materials before the class.

3.2 Cycle II

Based on the reflection of cycle I, the model lecturer and the team discussed the improvement for the second cycle. The lecturer created a lesson plan, worksheet, and learning media to improve students' activity in the
e-learning model. The do stage was begun by proposing some questions related to the topic of "the development of learning media." The students answered the questions actively, and the learning process seems to be more interesting since the students also asked several questions. Furthermore, the lecturer provided the worksheet and asked students to discuss according to the instruction in the module. Next, students in the group presented their discussion results by displaying their product. The observation results in cycle II showed that more students actively involved in the question and answer session compared to in cycle I. The observation results of cycle II can be seen in the following table.

| No | Indicator                                              | Score |
|----|--------------------------------------------------------|-------|
| 1  | The lecturer conducts student-centered learning        | 4.5   |
| 2  | Student-student interaction                           | 4     |
| 3  | Student-lecturer interaction                          | 4     |
| 4  | Student-learning material interaction                  | 4     |
| 5  | Students are actively involved in the learning process (listen/ask/respond) | 4.5   |
| 6  | Students draw conclusion                              | 4.5   |
|    | **Total**                                              | **25.5** |
|    | **Average**                                            | **4.25** |

The see stage was conducted after the learning process; the main focus of improvement for the next cycle was to enhance students' activity during the learning process. Several students were passive in the learning; thus the third cycle would focus on students' activity to encourage students engagement in the classroom. This is line with Gorby The use of ICT has the potential to open opportunities for new ways of doing things, thus developing creativity in learning.

### 3.3 Cycle III
In the plan stage, the lecturer and team discussed the action plan to improve students’ activity in learning and prepared the media and resources needed. In the do stage, the model lecturer started the meeting by brainstorming "the development of learning activity" materials and guided students to do the worksheet after the question and answer session. The students in the group wrote their discussion results on the flipchart paper and presented it. The students were actively involved and responded to the questions. The observation results of the third cycle indicated that the students have been familiar with the e-learning model. Students' online activity could be observed from their involvement in the discussion forum, online quiz submission, and assignment submission for each topic. Figure 2 shows students' online activity in the discussion forum.
What are the principles of the lesson plan development?

1. The competences that are formulated in the lesson plan should be clear.  
2. The lesson plan must be flexible and straightforward.  
3. The activity that is arranged and developed on the lesson plan should support and accordance with the basic competencies to be realized.  
4. The lesson plan that is developed should be complete/intact and thorough also the achievement should be clear.  
5. There must be coordination among components of program’s implementers in the school.

Figure 2. display of discussion forum

Table 3 shows the observation result in cycle III. It shows improvement in student activity. Based on the observation result, students' activity was in the good category with an average of 4.41. This result was indicated by the increase of student-centered learning process, student-student interaction, student-lecturer interaction, and student-learning material interaction.

| No | Indicator                                               | Score |
|----|---------------------------------------------------------|-------|
| 1  | The lecturer conducts student-centered learning         | 4.5   |
| 2  | Student-student interaction                            | 4.5   |
| 3  | Student-lecturer interaction                           | 4.5   |
| 4  | Student-learning material interaction                   | 4     |
| 5  | Students are actively involved in the learning process (listen/ask/respond) | 4.5   |
| 6  | Students draw conclusion                               | 4.5   |
|    | Total                                                  | 26.4  |
|    | Average                                                | 4.41  |
Based on the reflection on cycle III, the internet connection needed to be improved, so the students could easily access the e-learning when they needed to discuss or did the online quiz. The e-learning system is very helpful to encourage students to understand the learning material and be actively involved in the learning process. In line with the research conducted by reporting that blog content courses, and online presence have an impact on academic performance [8]. Similarly, video blog in the course content is also used to improve the efficiency of learning [9]. Besides the efficiency of online learning, the students also more dominant role in the interaction between lecturers and students. This is confirmed by the finding of a research conducted by “With blended learning environment, learners play the central role, interaction between teacher and student becomes more flexible in many different forms” [10]. Thus, the use of e-learning positively influence student activities.

Thus, the use of e-learning has a positive impact on learning. Students’ response towards the use of e-learning model could be accessed through students’ survey page at www.elearning.unsyiah.ac.id as seen Figure 3.

Chosen feedback responses
Response number: 1 (Anonymous)

1. I love learning using e-learning strategy
   Agree

2. Learning using e-learning strategy is troublesome
   disagree

3. Learning using e-learning strategy make me easy in accessing the materials
   agree

4. Internet connection is often challenging for me in learning using e-learning strategy
   agree

5. The information service given by the lecturer helps me in conducting e-learning activities
   agree

6. E-learning system allows me to control my learning progress
   agree

7. The use of e-learning enables me to learn or understand the materials I need
   agree

8. The e-learning system is user-friendly
   agree

9. I do not give up when facing difficulties in learning using e-learning strategy
   disagree

10. The use of e-learning strategy makes it easier for me to choose the materials I want to learn
    agree

11. The discussion forum helps me to face the problem in understanding the content, even the operation of e-learning itself.
    agree

Figure 3. e-learning survey result
4. Conclusion
In conclusion, the use of e-learning system in Lesson Plan Course could enhance students' activity during the learning process. The result could be seen from the increase in the average value per cycle. Thus, the e-learning system has a positive impact on students’ activity at the Primary Education Department in Teacher Training and Education Faculty, the University of Syiah Kuala. This finding indicates that e-learning is advantageous for student learning.

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