

The Effect of Online Learning on Student's Academic Achievement for Accounting Subject

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Abstract. Teaching and learning activities (TLA) for accounting courses were originally held offline, guided and accompanied by lecturers. Online TLA which suddenly had to be held due to the Covid-19 pandemic did leave doubts and questions regarding the achievement of student competencies. If theoretical lectures are considered 100% optimal, then this is not the case for practical activities. This activity is considered not optimal in its implementation online, although maximum efforts in providing practical materials in the form of modules and guides via video, coupled with meetings via zoom or other online meeting media have been taken as a form of learning method that is similar as possible to offline learning. This study aims to see if there is any effect of online learning method (synchronous and asynchronous) on student's competency in accounting. The experimental results show that there is a difference between the students' pretest and posttest scores. It means that both synchronous and asynchronous learning methods have an impact on students' competencies. Furthermore, the experimental results prove that there are differences in competencies between students who receive asynchronous and synchronous learning. Better performance were obtained by synchronous one.

1. Introduction

Since March 2020, the implementation of learning activities in all school levels in almost all parts of Indonesia are carried out online. This policy was taken by the government following the spread of the Corona virus which is increasingly widespread and threatens life safety. Since then, all parties involved in education, especially students, teachers/lecturers, and all supporting units in educational institutions at all levels are encouraged to adapt quickly to learning methods that minimize or even eliminate physical contact.

Teaching and learning activities (TLA) are carried out through various media that can bring together online between teachers and students, lecturers and students, mentors and guided students. Learning methods can be selected synchronously or asynchronously. If at the beginning or in the first semester, all parties are still stammering in carrying out this online learning, then entering the second semester, all parties have become more sophisticated in organizing and filling online meetings. Technological stuttering increasingly can be overcome quickly with a learning process that is forced by the situation. Even so, the results of learning from home or study from home that have been maximally implemented, in some ways still cannot match the results of offline learning that has been carried out so far. Research [1] found that online learning methods affect student motivation and learning outcomes.

Lampung State Polytechnic is one of the vocational higher education in Indonesia, obediently following government policies to reduce the spread of COVID-19. Teaching and Learning Activities (TLA) are held online through the Learning Management System which is currently built following the issue of the Internet of Things (IoT) and industry 4.0, also as the responsibility of institution to develop and stabilize the student's competency during pandemic era learning. The implementation of TLA still adheres to vocational guidelines, namely the proportion of 60:40 for practicum activities and theoretical lectures.

TLA for accounting courses was originally held offline with a practicum guided and accompanied by lecturers and technicians. With this method, it is hoped that the maximum competence of students can meet the criteria of graduates who are ready to work with optimal hard

skills and soft skills. Hard skills are acquired through full and focused assistance in the classroom/laboratory, while soft skills are honed through social interactions with lecturers, technicians, and other students.

Online TLA which suddenly had to be held did leave doubts and questions regarding the achievement of student competencies. If theoretical lectures are considered 100% optimal, then this is not the case for practical activities. This activity is deemed not optimal in its implementation online, although maximum efforts in providing practical materials in the form of modules/practicum books and guides via video, coupled with meetings via zoom or other online meeting media have been taken as a form of learning method that is similar as possible to offline learning.

Adaptation by higher education institutions related to Covid-19 is truly non-negotiable. Educational institutions, both private and government-owned, must be responsive in providing various facilities for the best possible implementation of TLA in order to maintain the quality of graduates. Adaptation is also absolutely done by Lecturers in carrying out the Tri Dharma of Higher Education. Students also adapt in fulfilling their right to learn, carrying out their obligations as the nation's next generation. In line with that adaptation, TLA in Accounting class at Polinela during the online learning period is carried out using synchronous and asynchronous methods. In the asynchronous method, TLA is carried out through several media, including the Polinela learning management system (LMS), Google Classroom, and e-mail. Meanwhile, with the synchronous method, KBM is held, among others, through whatsapp, zoom, and Google Meet. All methods and media are maximally empowered to achieve student competency targets.

The asynchronous method through the LMS, for example, allows students to attend lectures and practicums independently according to the instructions presented in the module and/or video. Meanwhile, the synchronous method provides opportunities for lecturers and students to interact directly. Lecturers can deliver teaching materials, discuss, and guide students in practical activities at the same time. However, there are still concerns about student competence in accounting through online learning as it is today. The purpose of this study is to see whether the online learning method affect the student's academic performance in accounting subject.

The findings in this study can be used as a basis for policy makers at the Lampung State Polytechnic to establish an effective learning system in achieving student competence. However, it is not limited to the Lampung State Polytechnic, policy makers in other universities that manage study programs or majors that have similar characteristics to the accounting field can also take the results of this research into consideration in making decisions regarding the implementation of TLA.

2. Methods

2.1 Sample. The paragraph text follows on from the subsection head

This study involved 121 students from 2 classes, Digital Business Accounting and Tax Accounting. The sample selection process begins with the registration using google form, then followed by socialization about the phases of experiment. After sort and selection process, 81 participants were held as samples of this study.

2.2 WEperimental design

This study uses a between-subject design, thus participants were placed in one group then only experienced one treatment. Participants received one of the following treatments:

- A. Receive module.
- B. Receive learning modules and videos
- C. Receive learning modules and videos, and conduct zoom meetings.
- D. Receive modules and conduct face-to-face learning

Groups A and B are groups that experienced online learning with asynchronous method, while groups C and D experienced online learning with synchronous method. The experiment was carried out using offline and online methods according to the needs of the experiment. Special tests, both pre and post, are carried out online with instruments prepared through the google form. The experimental stages are as follows:

1. Participants were divided into four groups.
2. Participants do the pre-test.
3. Participants receive the material module
4. Participants receive treatment based on their group
5. Participants do the post-test

This research uses instruments in the form of learning modules and videos that are used in online learning with asynchronous learning methods. In addition, instructional instruments for learning stages are also available for use when online learning is carried out using the synchronous method. While for offline learning, the instruments used are modules and instructional stages of learning. The module is based on a textbook [2].

The collected data is analyzed to determine whether it is normally distributed. Based on the results of the Shapiro Wilk test, it is known that not all of data are normally distributed, therefore a non-parametric t-test is used to test the hypothesis.

3. Results and Discussion

Paired t-test Wilcoxon Signed Rank between the pre-test and post-test scores in each group is held to answer hypothesis 1. The results as presented in table 1 below.

Table 1. Test Results of Pre-Test and Post-Test with Wilcoxon Signed Rank

Group	Variable	Min	Max	mean	Sign. 2-tailed
A	Pre-Test	13	65	38.08	0.023
	Post Test	27	69	54.50	
B	Pre-Test	25	58	45.82	0.001
	Post Test	25	88	65.88	
C	Pre-Test	0	65	50.63	0.001
	Post Test	24	95	73.89	
D	Pre-Test	15	65	38.77	0.007
	Post Test	38	100	77.11	

According to table 1, it can be seen that all p-values are less than 0.05, thus it is evident that there is a difference in values between the pre-test and post-test. This shows that all learning methods, both asynchronous and synchronous have an impact on student competence. The average value of the post-test also showed that the student's competence increased after receiving the treatment.

The second hypothesis was tested by comparing the results of the post-test between groups, then tested with the Mann Whitney non paired t-test. The test results are presented in table 2 below.

Table 2. Mann Whitney non paired t-test for Post Test Score

Group	Mean Rank	Mean	Signs. 2-tailed
Asynchronous			
A	12.33	54.59	0.155
B	16.88	65.88	
Synchronous			
C	0.003	73.89	0.98
D	14.44	74.92	
Asynchronous (AB) and Synchronous (C)			
AB	20.10	61.17	0.007
C	31.21	73.89	
Asynchronous (AB) and Synchronous (D)			
AB	17.41	61.17	0.037
D	26.22	77.11	
Asynchronous (AB) and Synchronous (CD)			
AB	22.52	61.17	
CD	35.71	74.92	

According to table 2, it can be seen that the post-test results in the asynchronous (A and B) and synchronous (C and D) groups, respectively, were not statistically different. Meanwhile, the results of the different tests for asynchronous and synchronous groups (with C alone, with D alone, or with CD at the same time) showed a significant difference, indicated by a p-value of less than 0.05. This means that the academic performance of students who receive asynchronous online learning is different from the academic performance of students who receive synchronous online learning. The first hypothesis, accepted.

Table 2 also presents information on the average post-test scores of students in the asynchronous and synchronous groups. It can be seen that the post-test scores of students in the synchronous group were higher than those in the asynchronous group. Thus, the second hypothesis is accepted.

The results of this study indicate that synchronous and asynchronous online learning has an impact on improving student competence. This is shown in the post-test results for each group (Table 2) which has a higher average value than the pre-test. Furthermore, the results of this study also show that there are differences in academic performance between groups who receive learning using asynchronous and synchronous methods. This finding is in line with the results of research [3], [4], [5], and [6].

Testing the second hypothesis in this study shows that synchronous online learning is more effective than the asynchronous method. Table 2 presents the mean scores in the synchronous group which were higher than those in the asynchronous group. This finding is in line with [3] but contradicts [6]. Synchronous learning methods involve students and teachers simultaneously, thereby increasing student participation and generating enthusiasm and responsibility in the learning process. Such a situation ultimately has an impact on the mastery of the material and the achievement of cognition by students ([4] and [7]). Meanwhile, research [6] actually found that the academic performance of students with the asynchronous method was higher than the synchronous group. These findings confirm previous research by [8]. [8] explained that the asynchronous method provides opportunities for students to download documents or send messages to teachers or study friends in more appropriate situations. In this way, students can contribute better. The asynchronous method provides opportunities for students/students to download documents or send messages to teachers or study friends in more appropriate situations [9]. In this way, students can contribute better. that the asynchronous method provides opportunities for students/students to download documents or send messages to teachers or study friends in more appropriate situations. In this way, students can contribute better.

4. Conclusions

Based on the results of the analysis that has been done, the authors can draw the following conclusions that there are differences in academic performance between students who receive learning using asynchronous online and synchronous online methods ; the academic performance of students who receive learning using the synchronous online method is better than that of students with the asynchronous online learning method.

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