

Optimization of Flipped Classroom Using Google Classroom to Improve Student Learning Outcomes

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ABSTRACT

Flipped Classroom is one of the learning models that reverses the traditional learning process where students study material outside the classroom, first and then joint the learning in class to develop their abilities. In the implementation of Flipped Learning is done by using features in the google classroom application. Through google classroom, teacher sends learning videos and material in the form of powerpoints, digital books and more. Learning in the Classroom learning is implemented by applying problem based learning models to improve students' thinking abilities. Using of google classroom is able to optimize student learning outcomes. Based on the results of the paired sample t test, the result show that the significance value (2-tailed) is .000, which means there is a significant difference between the pre-test and post-test result.

Keywords: *flipped classroom, google classroom, learning outcomes*

1. INTRODUCTION

The use of technology in learning is mandatory for educators in this millennial era. Students at all levels of education (primary, secondary and higher education) are now digital natives, generations who are familiar with digital technology. Besides, the use of technology makes them as experienced learner (Oblinger 2004). As learning paradigm shift occurred, teacher who was originally the only source of learning is now becoming a student learning facilitator. With the new role in the 21st century learning, some learning characteristics must be developed by educators in which teachers make students think, act and become something (Gardner 2008). Furthermore, the use of technology in learning needs to be established by selecting the right strategy to produce highly competitive graduates.

Educational researchers in various countries have developed a strategy to improve the ability of students through technology-based learning known as flipped learning. Bergmann and Sams (2014) interpret flipped learning as an effort to

reverse what is done at home in traditional learning and then it is carried out at school and what is done at school is traditionally carried out at home. Changes from traditional learning need to be done because in traditional learning students have different knowledge before they start learning in class and not all students who come to class are ready to learn Özkan Yılmaz (2017) Through the use of flipped learning, students will have preparation before coming to the class.

Flipped learning is one of the innovative learning models. This model is student-centered that accommodates active learning for students, so that it can improve their learning outcomes (Keengwe: 2014). According to Van Alten, D.C.D:2019), in Flipped learning students do a prior study outside the class before learning process in class is carried out. Chis et al. (2018) mention some examples of activities done outside the classroom which are watching videos, and looking for some information online. Ash (2012) states that after studying the material at home, students will get more understanding and

reinforcement of learning from teachers in the classroom.

Due to this reason, researchers are interested in discovering the effect of implementing flipped learning using Google Classroom on improving student learning outcomes.

2. METHODS

This study was a Quasy-experimental study with pretest and posttest group design. There were 2 groups given different treatments in which experimental group were taught by implementing flipped learning model with the use of Google classroom, while the control group was taught with conventional learning model. The population of this study was 128 students, from 4 different classes, of class XI IPS in SMA Negeri 2 Painan. Samples were selected using purposive sampling technique.

The consideration in selecting the sample was students 'scores and ability in passing the subject. 63 students from two classes, XI IPS 3 consisting 34 students, and XI IPS 1 consisting 29, participated as the samples of this study. XI IPS 1 was the experimental class, while XI IPS 3 was the control class. Furthermore, the data were collected through test. To ensure the quality of the tests, prior test to see validity, reliability, difficulty index analysis and question differentiation analysis were performed.

The data obtained through test were then analyzed by paired sample t-test and independent sample test statistics using SPSS to find out (1) whether there is significant difference between the pre-test and post-test results of students after given the treatment, (2) whether there is significant difference between the results of the

post-test in the experimental class and the control class.

3. RESULTS AND DISCUSSION

The flipped learning model in the experimental class was carried out through two stages; presenting material in Google classroom and implementing the problem based learning model in class. The steps of learning activities started with introducing learning procedures using the flipped learning model, displaying Google classroom in class, explaining the steps of using Google classroom, and providing the material to be uploaded. Then, the teacher asked the students to learn independently at home with given material in which they watched and comprehended it as an initial concept for the material. Next, the teacher told students that they would discuss a case study that was given to each group. Lastly, the material discussed in the next meeting was given, and the students were asked to learn independently through video and power point and to do quiz that has been uploaded in Google classroom.

In the control class, material and learning objectives were elaborated. The teacher explained the learning materials which were about the notion of international trade, the benefits of international trade and the factors driving and inhibiting international trade. Then, the students were given the chance to ask which learning materials have not been understood. Then, the researcher gave exercises. When it was done, they discussed it together with teacher. Lastly, the teacher and students concluded the lesson.

Based on the treatments given to the control class and the experimental class, the results are obtained as follows:

Table 1. Descriptive Statistics of Data

Descriptive Statistics						
	N	Range	Minimum	Maximum	Mean	Std. Deviation

Table cont..

Pre-test of Experimental class	29	29	31	60	48.69	7.677
Post-test Experimental class	29	28	69	97	85.90	6.310
Pre-test of Control Class	34	23	43	66	53.15	6.224
Post-test of Control Class	34	20	66	86	77.24	5.188
Valid N (listwise)	29					

Source : Primary Data 2020

In the table above, it is shown that the posttest results were higher than the pretest results in the experimental class. In the experimental class, the posttest results were higher than the posttest

results in the control class. The differences between the pretest and posttest results in the experimental class are presented the following table:

Table 2. Paired Sample T-Test

Paired Samples Test								
		Paired Differences						
		Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Pair 1	Pre-Test Experiment class - Post-Test Experiment class	11.346	2.107	-41.523	-32.891	-17.659	28	.000

Source : Primary Data 2020

Based on paired sample t-test results, it was revealed that the significance of the tailed test results was .000 which means that there was a significant difference between the learning outcomes before and after treatment given to the class implementing flipped learning with the use

of Google classroom. To see the difference between the experimental class and the control class, an independent sample test was performed and the results are presented in the following table.

Table 3. Result of Independent Sample Te

Independent Samples Test								
		t-test for Equality of Means						
		F	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference

Table cont...

								Lower	Upper
Learning Outcomes	Equal variances assumed	.728	5.980	61	.000	8.661	1.448	5.765	11.557
	Equal variances not assumed		5.887	54.285	.000	8.661	1.471	5.712	11.610

Source : Primary Data 2020

Based on the result, it is revealed that the Sig (2 tailed) value was 0.000, which means that there was significant difference of learning outcomes in experimental and control class. The implementation of flipped learning with Google classroom can improve student learning outcomes. This happens due to the increased activity, involvement and students' motivation in learning. In learning outside the classroom, the teacher uploads interactive videos that are useful for students (Educause, 2012). Moreover, students must learn independently by watching videos, reading books or modules online and building understanding of the material that they learn. Besides, in Flipped Learning students also do homework (Elian & Hamaidi, 2018). Besides giving material on Google classroom, the teachers are able to provide assignments, quizzes or problems that make them implement what they have acquired. They are also encouraged to learn so that they will not be passive learners in class (Asiksoy & Ozdamli, 2016). Asiksoy & Ozdamli (2016) also add that providing information and problem to be solved related to material before coming to the class will force the students to learn; in fact, they will not just listen to teacher's explanation.

Flipped Learning has four implementation pillars which are a flexible environment, learning culture, deliberate content and professional educators Ügüten and Balci (2017). Flipped learning with Google Classroom makes it possible for students to learn inside and outside the classroom. Through the use of Google classroom in learning outside the classroom, students will

develop a culture of learning, so students are accustomed to thinking, and solving problems. Furthermore, flipped learning requires teachers to have good preparation by providing learning videos in the form of the teacher's own video recording, interactive power points, motivational videos, and other teaching materials. Teachers are also required to be professional in organizing learning so that learning objectives can be achieved. If the teacher is not fully aware of their vital role in flipped learning, the teacher will fail to bring the whole learning process. Flipped learning not only means transferring information, but also involves the internalization of knowledge. To achieve the internalization of knowledge, the teacher must set more time spent by students to improve higher-order thinking skills such as finding problems, collaboration, design, solving problem, working in groups, researching, and building knowledge with the help of teachers and peers.

The implementation of flipped learning is not without constraints (JiaSuo & XiuyingHou, 2017). Problems encountered in flipped learning include students' learning autonomy in which they control their learning time, space, and progress which can increase their motivation. However, it is also found some students who lack of motivation and self-discipline in which they do not watch videos given and access the learning materials. Therefore, they cannot be fully involved in class activities designed to strengthen the acquisition of knowledge, and cannot successfully complete the tasks assigned.

Considerable numbers of researchers have carried out a research on this area and have shown the successful results. Yanxia Du (2020) proved that this learning model is able to improve students' self-management learning abilities, stimulate student motivation in independent learning and activate student self-learning behavior. Besides, an experimental study conducted in chemistry field by Manoharan, C., and Birundha (2019) showed that that the pre-test and post-test mean scores of the experimental group were significantly different .001 with the mean score post-test. Based on previous studies and current study, it is proven that implementing flipped learning can improve students' learning abilities and outcome.

4. CONCLUSIONS

The implementation of flipped learning is an effort to carry out learning in accordance with the needs of students in the 21st century era. Reversing the traditional learning process that has been carried out with two stages in which students learn outside the classroom before learning in class. The learning process outside the classroom is carried out with the use of Google classroom by providing learning videos, power points and other learning resources. The active role of students is highly demanded to be able to improve students' thinking skills through their efforts to access material outside the classroom and do assignments. The implementation of learning in the classroom is directed at the activities of finding problems, collaboration, design and problem solving, working in groups, researching, and building knowledge with the help of teachers and peers. The results of current study show that the implementation flipped learning can improve student learning outcomes in economic subjects.

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