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The Effect Of Using The Flipped Classroom Learning Model Using Video Interactive Media On Learning Outcomes

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Abstract: This study aims to determine the effect of using the flipped classroom learning model using video interactive media on the learning outcomes of class X IPS students in economics at SMAN 1 Suela. The type of research used is experimental research. The population in this study were all students of class X IPS. Which consists of class X IPS A, X IPS B, X IPS C. Random sampling technique (random sampling technique). The instrument used is an objective test in the form of multiple choice consisting of 25 questions. Data analysis used data normality test, data homogeneity test, and hypothesis testing used parametric statistical tests. The results of the experimental class research showed that the highest score was 95 and the lowest score was 76 with a post-test average of 82.03 and a standard deviation of 5.245. Whereas in the control class the highest score was 90 and the lowest score was 60 with an average post-test score of 76.13 and a standard deviation of 7.074. For the results of hypothesis testing for learning outcomes for the experimental class and control class obtained a significance value (2-tailend) on the t-test for Equality of Means of 0.000 <0.05 meaning that Ho is rejected and Ha is accepted. This means that the use of the Flipped Classroom Learning Model Using Video Interactive Media Has a Positive and Significant Influence on the Learning Outcomes of Class X IPS Students in the Subject of Economics at SMAN 1 Suela Tahuan Lesson 2022.

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Introduction

In West Nusa Tenggara (NTB) education is very familiar to an area because education is very important for the local community with education we can change a person's behavior for the better, so that the community prioritizes education as an alternative to improve quality or knowledge which greatly helps development for the local community, Nurmisda (2021). explains that the simple meaning of the word education is always interpreted as an effort made by humans to increase or grow their individuality in accordance with the cultural order and norms that exist in society, (Fahrurrozi & Mohzana, 2022; Fahrurrozi & Rahmawati, 2021; Ismail, Ali, & Us, 2022; Khaidir & Suud, 2020; Mohzana, Mohzana, Muh Fahrurrozi, 2022). In the process of its development, the term education or pedagogy is defined as instructions or help deliberately given by adults to minors to make them adults (Wahab, J., 2020; Qur'ani, H. B., 2018; Pyle, A., & Danniels, E., 2017; Berliner, D. C., 2001).

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In particular, in Suela District, East Lombok Regency, they are no strangers to education, even though the place is said to be a newly developed village, especially in the agricultural sector in the processing of tobacco, rice and vegetables. Apart from that, they also do not forget that education is more important because they have a very strong and high level of motivation, namely by going to school the aim is to achieve goals and be useful for the surrounding community.

Especially in Suela Village, there are no longer those who think that education is an unprofitable profession. In fact, they really prioritize the name of school because school is the obligation of every person to study so that they can become an advanced and intelligent society in the world of education and others. So they are very careful in choosing a good school for them so that many of them choose an advanced school, one of which is at SMAN 1 Suela, which is located in Suela Village, Suela District, which is very easy to find or meet by the local community. At SMAN 1 Suela, it is said that it is one of the schools that is advanced and has achievements and competes globally in addition to being advanced. At SMAN 1 Suela, students are no longer in doubt about their learning achievements because they have complete facilities and professional teachers in educating students.

Thus, to fulfill the purpose of the definition of education, a learning process is needed. The term learning is closely related to the notion of learning and teaching. Learning, teaching, and learning happen together. Learning can occur without a teacher or without teaching activities and other formal learning. While teaching includes everything that the teacher does in the classroom which basically says what the teacher does so that the teaching and learning process runs smoothly, morally and makes students feel comfortable is part of the teaching activity, also specifically trying and trying to implement the curriculum in the classroom (Suwardi, I., & Farnisa, R., 2018; Cerit, Y., 2013; Gouëdard, P., 2020).

According to (Fenanlampir, Leasa, & Batlolona, 2021; Wu, Zhang, & Lee, 2023) learning cognitivism theory occurs by activating students' senses in order to gain understanding. In activating a teacher, he must use media or tools, a conducive environment, and various learning methods/models, so that he can develop the potential of students by changing the learning process to become a student center. By changing the learning process into a student center, it can make learning more active and involve students in physical activity or involve students mentally and thinking.

The cause of the low learning outcomes in the control class is that students' grades are still below the KKM because the learning model used by the teacher is still not appropriate to overcome problems during the learning process. In contrast to the experimental class using the flipped classroom learning model using interactive video media can improve learning outcomes. In addition, the flipped classroom learning model is a model of focusing on student learning (student center), and a learning model that utilizes information and technology (ICT) developments (Eko., 2021).

With the flipped classroom learning model using video interactive media it is very suitable to be applied at SMAN 1 Suela because it can improve learning outcomes, besides that it can increase student understanding through learning videos. therefore the Flipped classroom is an approach that moves the transfer of information out of the classroom and the assimilation of information into the classroom makes it possible to train students to be active and participatory in learning in class. In other words, reverse class is a learning method and strategy that involves students to learn more dominantly and more actively. The philosophy is

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that learning outcomes are achieved if the learning method is reversed, the approach is reversed, and the role of the teacher is reversed, (Bates, Almekdash, & Gilchrest-Dunnam, 2017; Dupoux, 2018; Matamoros-González, Rojas, Romero, Vera-Quiñonez, & Soto, 2017; Raiola, 2017) .

One of the causes of educational success is determined by how much the teacher's contribution is in creating learning models and how much student participation is in participating in teaching and learning activities (Fahrurrozi, Mohzana, Murcahyanto, & Basri, 2022). The more actively students take part in learning interactions, the easier educational goals will be achieved, (Fahrurrozi, Mohzana, Hartini Haritani, Dukha Yunitasari, & Hasan Basri, 2023) . However, the implementation of the learning process in the classroom is often faced with many obstacles both from the side of the teacher, students or the educational institution itself. It is difficult for teachers to let go of the traditional learning model which seems to have become a culture that must be preserved in the world of education. Success is a teaching and learning process that can be said to be successful, each teacher has their own views in line with their philosophy (Barrow & Woods, 2021; Chowdhury, 2018; El Nagdi, Leammukda, & Roehrig, 2018). However, to equate perceptions we should be guided by in the current curriculum that has been perfected, including that "a process of teaching and learning about a teaching material is declared successful if specific instructional objectives (ICT) can be achieved" (Aswan, 2013).

At SMAN 1 Suela, there are facilities and infrastructure that support the teaching and learning process in the form of a computer laboratory, library and multimedia learning room. These facilities and infrastructure have not fully supported student learning outcomes in accordance with predetermined criteria. Because students are very limited in interaction with the teacher due to limited time with students, so that students' understanding of the material is very lacking and student motivation decreases in the teaching and learning process. Especially in the Subject of Economics is one subject that has a high level of difficulty in the eyes of students. Economics is still considered a difficult subject. So that the motivation of students to study Economics is still very low. To change this assumption, Economics teachers in particular are required to be more active, creative and innovative so that the educational goals to be achieved can be optimally successful because the teacher has a major role in the learning process. Facilitating learning for students is the teacher's main task, teachers are not only required to make the learning atmosphere comfortable and interesting, but also must be able to create learning models that are appropriate to the circumstances of students and provide space for students to be creative and actively involved throughout the learning process. So that the cognitive, affective and psychomotor aspects of students can develop optimally simultaneously. In (Lumbantobing, 2020; L. Mishra, Gupta, & Shree, 2020; P. Mishra et al., 2019; Perdana, Sarwanto, Sukarmin, & Sujadi, 2017) said that in learning activities, motivation can be said to be the overall driving force within students that generates learning activities, which ensures the continuity of learning activities and provides direction to learning activities, so that the goals desired by the learning subject are achieved.

Along with the rapid development of very advanced technology, it can help the government in improving the quality of education, one of which is developing new innovations that can help facilitate teachers in the learning process, one with interactive video media which really helps the student learning process so that students can understand material easily and very efficiently for students to understand material through videos sent via google

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classroom by teachers so that students can study, both at home and at school and students can repeat material that has been studied if there is material that has not been studied understood by students, then students can discuss with the teacher so that the objectives of learning outcomes can be achieved. (Chu, Reynolds, Tavares, Notari, & Lee, 2021; Ferri, Grifoni, & Guzzo, 2020; Mispandi & Fahrurrozi, 2023; Tohara, 2021), emphasized that humans, devices, situations and conditions, which enable students to gain knowledge, competence, abilities, and ethics are media. Thus the teachers, textbooks and student handbooks, and the area around the school can be said to be media. When associated with current technological developments in the field of learning, what is meant by media in relation to learning are forms of animation equipment, graphics, video, photos, and electronic devices that have the ability to make shots, process, and rearrange messages (teaching materials) in the form of visual and verbal.

Based on the description above, the researcher intends to conduct research with the title "The effect of using the flipped classroom learning model using interactive video media on student learning outcomes in Class X Social Sciences in Economics Subjects at SMAN 1 Suela".

Research Method

This research was conducted at SMAN 1 Suela in the Subject of Economics, students of class X Social Sciences for the 2022 Academic Year. The type of research used in this study was experimental research, with a quantitative method. Experimental research can be interpreted as a research method used to find the effect of certain treatment on others under controlled conditions (Sugiyono, 2008).

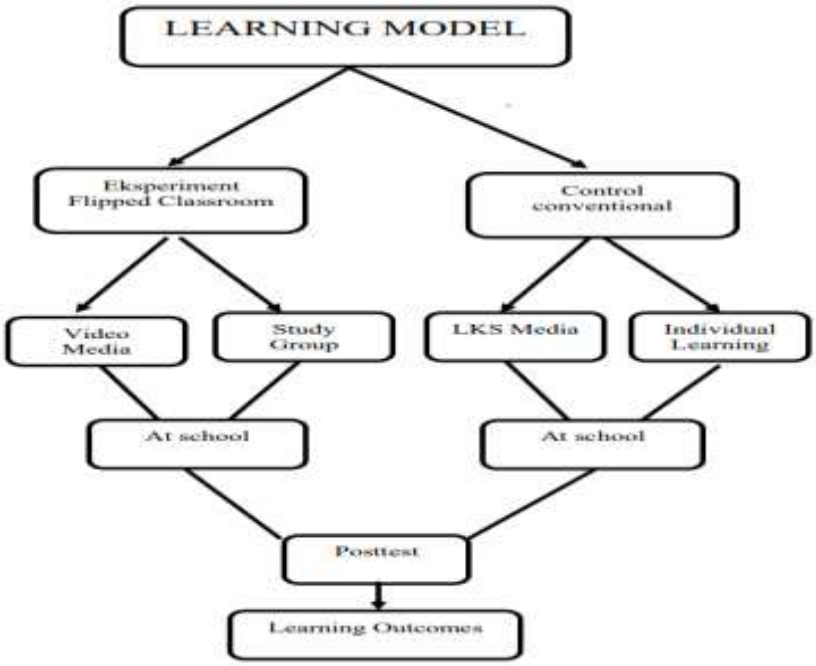

Figure 1 Research Design

The population in this study were students of class X IPS at SMAN 1 Suela. The sample is part of the number and characteristics possessed by the population (Sugiyono, 2013). In determining the sample, it must be designed in such a way by paying attention to

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several conditions and using accountable sampling techniques (Sumanto, 2014). Therefore, in this study, 2 class samples were taken, namely by random or called random sampling because in this study there were two classes studied and the number of students was 32 / class, while the number of social studies classes at SMAN 1 Suela was 3 classes.

The data collection technique in this study was a multiple choice test instrument consisting of 25 questions. In addition, observations in the form of sheets were given to observers to make observations during the learning process, documentation related to photos of activities during research, as well as interviews with economics teachers at the school regarding learning activities, methods, models and media commonly used during learning.

Data analysis is an activity after data from all respondents or data sources has been collected. Activities in analyzing data are grouping data based on variables from all respondents. Presenting data for each variable studied, performing calculations to test the hypotheses that have been proposed. Data analysis in this study used SPSS 16 software to test normality, homogeneity and hypotheses.

The data obtained is described using descriptive statistics (P. Mishra et al., 2019). This descriptive statistic includes determining the average or mean score (M) and the standard division (SD). For the purposes of compiling a convention table, first look for the ideal mean (Mi) and ideal standard deviation (SDi) with the following formula:

$$Mi = \frac{1}{2} \text{ x } SMi$$

$$SDi = \frac{1}{3} \text{ x } Mi$$

Information :
Mi : Mean ideal
SMi : Standard mean ideal
SDi : Standard devisi ideal

Based on the acquisition of MI and SDi above, a table of conventions for categorizing each variable to be studied is made as follows:

Table 1. Guidelines for the Relative Norm Convention Scale of Three

Intervals	Categories
Mi + 1 SDi ≤ A ≤ Mi + 3 SDi	High
Mi - 1 SDi ≤ A < Mi + 1 SDi	Moderate
Mi - 3 SDi ≤ A < Mi - 1 SDi	Low

For categorization purposes, the researcher needs to look for the Ideal Mean (Mi) and the Ideal Standard Deviation (SDi). In this study, the ideal maximum score for learning outcomes = 100 and the ideal minimum score = 0. The formula is as follows:

$$Mi = \frac{1}{2}(\text{ ideal maximum score + ideal minimum score})$$
$$= \frac{1}{2}(10\ 0+0)$$
$$= 50$$
$$SDi = \frac{1}{3}(\text{ Mi})$$
$$= \frac{1}{3}(50)$$
$$= 16.67$$

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High Category		
Mi + 1 SDi	Until	Mi + 3 SDi
50 + 1(16,67)	Until	50 + 3 (16,67)
66,67	Until	100
Moderate category		
Mi - 1 SDi	Until	Mi + 1 SDi
50 - 1(16,67)	Until	50 + 1 (16,67)
33,33	Until	66,67
Low Category		
Mi - 3 SDi	Until	Mi - 1 SDi
50 - 3(16,67)	Until	50 - 1 (16.67)
0	Until	33,33

Result and Discussion

1. Learning Outcome Data

Experimental Class Learning Outcomes Data

In the experimental class, learning was carried out using the flipped classroom learning model using interactive video media. The learning outcomes of experimental class students after being processed using SPSS 16.0 are as follows

Table 2. Experiment Class Data Description

Statistics

Experiment		
N	Valid	32
	missing	0
Means		82.03
std. Error of Means		,927
std. Deviation		5,245
Variances		27,515
Range		19
Minimum		76
Maximum		95

Based on these data, the experimental class average (mean) was 82.03 and the standard deviation was 5.245. While the lowest score is 76 and the highest score is 95. The frequency distribution table is presented as follows:

Table 3. Experiment Class Frequency Distribution

Experiment t

		frequency	percent	Valid Percent	Cumulative Percent
Valid	76	6	18,8	18,8	18,8
	78	3	9,4	9,4	28,1
	80	9	28,1	28,1	56,3
	82	3	9,4	9,4	65,6
	84	2	6,3	6,3	71.9
	85	3	9,4	9,4	81.3
	88	1	3,1	3,1	84.4
	90	3	9,4	9,4	93.8
	93	1	3,1	3,1	96.9
	95	1	3,1	3,1	100.0

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Total	**32**	**100.0**	**100.0**	

Based on the table above, it can be illustrated that students who get scores above the average with a score of 82.03 are 43.75% or 14 out of 32 students, while students who get scores below the average are 56.25% or 18 out of 32 students. But for the experimental class it is said that all student learning outcomes are declared complete because they are above the KKM 75. For more details, it can be displayed in the form of a histogram as follows:

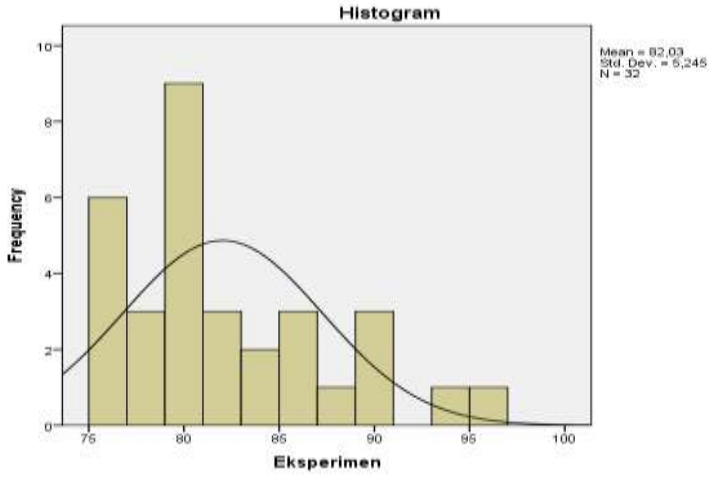

Figure 2. Histogram of Experimental Class Learning Outcomes

It is known that the average experimental class is 82.03 so that it can be classified into the high category.

Control Class Learning Outcome Data

In the control class, learning was carried out using conventional learning models using blackboard media. The learning outcomes of control class students after being processed using SPSS 16.0 are as follows:

Table 5. Description of Control Class Data

Statistics		
Control		
N	Valid	32
	missing	0
Means		76,13
std. Error of Means		1,251
std. Deviation		7,074
Variances		50,048
Range		30
Minimum		60
Maximum		90

Based on these data, the control class average (mean) is 76.13 and the standard deviation is 7.074. While the lowest score is 60 and the highest score is 90. The frequency distribution table is presented as follows:

Table 6 Frequency Distribution of Control Class

Control					
		frequency	percent	Valid Percent	Cumulative Percent
Valid	60	1	3,1	3,1	3,1
	62	1	3,1	3,1	6,3

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64	2	6,3	6,3	12.5
70	3	9,4	9,4	21,9
72	2	6,3	6,3	28,1
74	2	6,3	6,3	34,4
76	6	18,8	18,8	53,1
78	2	6,3	6,3	59,4
80	6	18,8	18,8	78.1
82	2	6,3	6,3	84.4
84	3	9,4	9,4	93.8
86	1	3,1	3,1	96.9
90	1	3,1	3,1	100.0
Total	32	100.0	100.0	

Based on the table above, it can be illustrated that students who get scores above the average with a score of 76.13 are 65.62% or 21 out of 32 students, while students who get scores below the average are 34.37% or 11 out of 32 student. But for the control class it is said that the student learning outcomes of half of the total number of control classes are declared complete because they are under KKM 75. For more details, it can be displayed in the form of a histogram as follows.

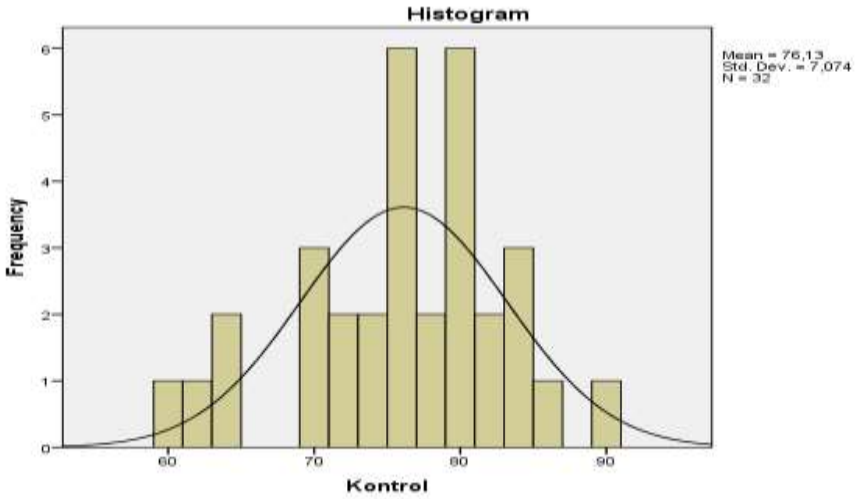

Figure 2. Histogram of Control Class Student Learning Outcomes

It is known that the average control class is 76.13 so that it can be classified into the high category.

2. Test Data Analysis Requirements Test

Normality test

The normality test aims to find out whether the residual values are normally distributed or not. A good regression model is to have normally distributed residual values. In this study, two sample classes were used, namely the experimental class and the control class. Therefore, it is necessary to test the normality of the two classes used in this study. One is said to be normal if the significance level is > 0.05, whereas if the significance level is <0.05 then the distribution is said to be abnormal. To test the normality of the data, the Kolmogorov-Smirnov test was used using SPSS 16.0. The results of the analysis can be presented in the following table.

Table 7. Data Normality Test Results

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		Unstandardized Residuals
N		32
Normal Parameters [a]	Means	.0000000
	std. Deviation	5.24317737
Most Extreme Differences	absolute	.201
	Positive	.201
	Negative	-.121
Kolmogorov-Smirnov Z		1.137
asymp. Sig. (2-tailed)		.151

a. Test distribution is Normal.

Based on the table above, it can be concluded that the significance level obtained is 0.151> 0.05, so that it can be said to be normally distributed.

Homogeneity Test

Homogeneity test is a test of whether the variances of two or more distributions are the same. In this study using two class samples, namely the experimental class and the control class must be homogeneous by using a post-test for learning outcomes. Therefore, it is necessary to test the homogeneity of the two classes used in this study. If the significance value is > 0.05, the data distribution is homogeneous, and vice versa if the significance value is <0.05, the data distribution is not homogeneous. To test data processing is to use the Levene statistical test with SPSS 16.0 and the results are as follows:

Table 8. Data Homogeneity Test Results

Economic Outcomes	Learning		
Levene Statistics	df1	df2	Sig.
1593	1	62	.212

Based on the table, a significance value of 0.212 > 0.05 is obtained so that it can be said to have a homogeneous distribution.

Hypothesis Testing

After the data to be analyzed meets the requirements, namely normal and homogeneous distribution, the next step is to test the hypothesis. Hypothesis testing is carried out using a parametric statistical test, namely *the Independent Samples Test.* This test is used to make a decision whether the hypothesis is accepted or rejected. Processing is done using SPSS 16.0. The test steps are as follows:

Table 8. Hypothesis Test Results

Levene's Test for Equality of Variances	t-test for Equality of Means

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		F	Sig.	Q	Df	Sig. (2-tailed)	Mean Differences	std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Student learning outcomes	Equal variances assumed	1593	.212	3,794	62	.000	5,906	1,557	2,794	9018
	Equal variances not assumed			3,794	57,175	.000	5,906	1,557	2,789	9024

Based on the data processing results table above, a significance value (2-tailed) is obtained on the t-test for Equality of Means of 0.000 <0.05. Thus, the null hypothesis (Ho) is rejected and the Alternative Hypothesis (Ha) is accepted. This means that "there is a positive and significant effect of the flipped classroom learning model using interactive video media on the learning outcomes of class X IPS students in the subject of Economics at SMAN 1 Suela".

3. Discussion of Research Results

Basically the implementation of teaching and learning activities by researchers in both the experimental class and the control class is not much different, because the learning model used both requires students to learn actively. This result is due to the teacher's role as a facilitator. At the time of observation the researcher saw students who lacked interaction in learning for the control class, students just sat and listened to what the teacher said; students were afraid to ask the teacher or their own class mates. In contrast to the experimental class, the students were more active because the learning model used was not boring because the media used in conveying the material was video so that students easily understood what was conveyed by the teacher and the teaching and learning process became more active and not boring.

Control Class

In the control class the researcher carried out the teaching and learning process in two meetings and each meeting consisted of two hours of lessons and the remaining time was used for taking the post-test. Where in this control class material was conveyed about the Basic Concepts of Economics, with LKS media. In the process of learning activities with LKS media the first step taken by the teacher is to mention indicators / convey goals, the teacher provides a lesson framework, namely preliminary activities to find out the initial knowledge that students already have, convey learning objectives.

Then the teacher presents the subject matter about the Basic Concepts of Economics and re-explains things that are considered difficult or not understood by students and students are given the opportunity to ask questions about the explanation conveyed by the teacher. After the teacher finishes explaining, the teacher asks students about the subject matter that has been discussed. The final stage is the teacher checks understanding and provides feedback to students.

When the teaching and learning process takes place following the lessons mediocre. This is because students are not active in the teaching and learning process and the main source of lesson delivery is still focused on the teacher so that the active nature of students is

still lacking and students do not understand the concept of the lesson because they tend to memorize the material conveyed by the teacher and also each student has a handle (LKS). So students only listen and focus on the LKS without wanting to ask questions. So that only the teacher is active and the students are passive. After conducting the research, the highest post-test score was 90, the lowest score was 60, and the average score was 76.13.

Experiment Class

In the experimental class the researcher carried out the teaching and learning process with two meetings to present the material and one meeting was used to provide a post-test. In the experimental class one meeting consisted of two hours of lessons, where in this experimental class the material was delivered using the flipped classroom learning model using interactive video media which required students to be active in the teaching and learning process.

By using the flipped classroom learning model using interactive video media, students are more active in the teaching and learning process. This is marked by increased student attention to learning, students often ask questions, students are able to express their own ideas and are not afraid to ask questions and be laughed at by their friends.

In the flipped classroom learning model using video interactive media the first step is to do when starting learning, namely praying first, then the teacher checks the student attendance list after that the teacher provides material in the form of learning videos with basic economics concepts so that the teaching and learning process is more active and not boring for students, after that the teacher asks students to understand the videos that have been shared via Google Classroom, then the teacher asks students which material students have not understood so that they can be discussed together and the teacher gives feedback to students namely giving questions in the form of a post-test to hone how far the understanding of the material that has been delivered by the teacher so that the teaching and learning process is more active and not boring for students because this learning video can help develop students' vocals in speaking and help students to develop students' potential in express students' ideas and understanding of the material presented.

So that the opportunity to process information and improve communication skills is getting better and increasing. Thus the learning process can run well and lead to increased student learning outcomes. Because the Flipped Classroom learning model utilizes learning media that can be accessed online which is able to support student learning materials. This model is not just learning using learning videos, but emphasizes how to use time in class so that learning is of higher quality and can increase students' knowledge and thinking skills (Yulia Janatin, 2019) .

Using the flipped classroom learning model using video interactive media can develop meaningful learning processes that will affect students' understanding and memory. After conducting the research, the highest post-test score was 95, the lowest score was 76, and the average score was 82.03.

Processed Results of Experimental Class and Control Class Data

From the results of the calculation of the normality test that the data on student learning outcomes in the basic economics concept material in the experimental class and control class is normally distributed. This is evidenced by the results of the significance level obtained by 0.151> 0.05, so that it can be said to be normally distributed.

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Meanwhile, for the normality homogeneity test, the data on student learning outcomes in the basic economics concept material in the experimental class and control class is homogeneous in distribution. This is evidenced by the results of a significant traffic value of 0.212 > 0.05 so that it can be said to have a homogeneous distribution.

Based on the results of hypothesis testing for learning outcomes for the experimental class and control class with basic economic concepts material, a significance value (2-tailed) is obtained on the t-test for Equality of Means of 0.000 <0.05. Thus, the null hypothesis (Ho) is rejected and the Alternative Hypothesis (Ha) is accepted.

This proves that the use of the flipped classroom learning model with video interactive media is much better than the conventional learning model because with the flipped classroom learning model student learning outcomes can increase and understand the material that has been studied longer, because students seek and find the essence of the learning being delivered by the teacher independently, it can be proven by the use of the flipped classroom learning model with interactive video media during the post-test student learning outcomes obtained the highest score of 95 and the lowest score of 76 with an average of 82.03 for the experimental class. Meanwhile, for the control class, student learning outcomes obtained the highest score of 90, the lowest score of 60, and the average value of 76.13. Thus the flipped classroom learning model using interactive video media influences student learning outcomes which are much more improved than conventional learning models.

Conclusion

Based on the results of research conducted at SMAN 1 Suela using the flipped classroom learning model using interactive video media, it can be concluded that the use of the flipped classroom learning model using interactive video media has a positive and significant effect on student learning outcomes, where the significance value (2- tailed) on the t-test for Equality of Means of 0.000 <0.05. Thus, the null hypothesis (Ho) is rejected and the Alternative Hypothesis (Ha) is accepted.

This proves that the use of the flipped classroom learning model with video interactive media is much better than the conventional learning model because with the flipped classroom learning model student learning outcomes can increase and understand the material that has been studied longer, because students seek and find the essence of the learning being delivered by the teacher independently, it can be proven by the use of the flipped classroom learning model with interactive video media during the post-test student learning outcomes obtained the highest score of 95 and the lowest score of 76 with an average of 82.03 for the experimental class. Meanwhile, for the control class, student learning outcomes obtained the highest score of 90, the lowest score of 60, and the average value of 76.13. Thus the flipped classroom learning model using interactive video media influences student learning outcomes which are much more improved than conventional learning models.

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