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Implementation Of E-Learning to Improve Motivation and Learning Outcomes in Class XI Multimedia Students in Creative Entrepreneurship Products Design Subject

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ABSTRACT

The rapid technological progress had an impact on all aspects of life related to the world of information and technology, including education. Following the pandemic COVID-19, the use of the internet and e-learning had become widespread, and which purpose is to substitute offline class activity. This study aims to determine the increase in student learning outcomes after being given treatment with E-Learning models on the subject of Entrepreneurial Creative Products Design. This research was conducted in one of the SMK Negeri 2 Bandung. The method used in this study is quantitative method and the model used is cooperative learning. The class activity is observed and divided into 2 cycles to ensure the continuous effect of E-learning. The results of the classroom action research carried out had an increase in learning outcomes by 31.4% based on their average scores. There is also an increase in student activeness by 17%. The result shows that E-learning is effective to be implemented in class.

ARTICLE INFO

Article History:
Submitted/Received 20 Nov 2021
First Revised 20 Mar 2021
Accepted 14 Jun 2022
First Available Online 15 Jun 2022
Publication Date 01 Jul 2022

Keyword:
Cooperative learning,
E-learning,
Entrepreneurship,
Product Design

1. INTRODUCTION

Technology is currently developing very fast. This very rapid technological progress has an impact on all aspects of life related to the world of information and technology. One form of technological development is the Internet. With the Internet we can receive and access information in various formats from all corners of the world. Data taken from Indonesian Association of Internet Service Provider (Asosiasi Penyelenggara Jasa Internet Indonesia or APJII), stated that in Indonesia there are around 25 million Internet user and its users continues to grow by around 25% (Setiawan, 2018). The presence of the Internet can also provide convenience in the world of education, this can be seen by the many websites that provide learning media that are increasingly interactive and easy to learn. Not only to be used as information source, website contains various learning systems can also be carried out on the Internet. By using these various website and media to carry out the process of teaching and learning, learning goals can be achieved and can also improve student's motivation to learn (Moto, 2019).

The use of the internet for educational purposes which is increasingly widespread, especially in developed countries, is a fact which shows that this media does enable a more effective teaching and learning process to be held. As a medium that is expected to be part of a teaching and learning process in schools, the internet must be able to provide support for the implementation of an interactive communication process between teachers and students as required in a learning activity (Iswanto, 2017). It's the same with online training for teachers who need a special competency to improve their quality.

In the current situation in Indonesia which is being hit by the COVID-19 pandemic, the Government recommends not going to school and implementing a distance learning scheme by implementing online learning using e-learning such as Google Classroom, Google Drive, MLS and WhatsApp. The presentation of e-learning can be more interactive. Learning information can also be presented in an up-to-date and real-time manner. Likewise with the communication, even though it cannot be face-to-face, but the KBM discussion forum can be done online so that learning that is not limited by place and time (time and place flexibility) really happens. This e-learning system has no access restrictions, this is what makes it possible for learning process to be carried out in more time.

With E-learning and the vastness of current media, Collaborative Learning comes into play. In collaborative learning, a group of learners (in this case, involves a student and sometimes, teacher) are working together to solve a problem, complete a task and create a product (Laal & Laal, 2012). But just having student to do group work is not enough. Collaborative learning is deemed successful when they encourage interactivity, such as shared elaboration and explanation (Pluta et al., 2013). By using collaborative models, the teachers can ensure the longevity of class activity in both learning and social aspect.

With the description above, the researcher is interested in conducting class action research (CAR) in class XI multimedia using E-learning which is one of the solutions for distance learning with the title " Implementation Of E-Learning to Improve Motivation and Learning Outcomes in Class XI Multimedia Students in Creative Entrepreneurship Products Design subject".

2. METHODS

2.1. Research design

This classroom action research (CAR) was conducted in class XI Multimedia SMK Negeri 2 Bandung in the subject of Creative Entrepreneurship Products Design Subject with the application of the E-Leaning method. The subjects in this class action research were students

DOI: http://dx.doi.org/10.17509/xxxx.xxx
p- ISSN xxxx-xxxx e- ISSN 2774-7891

of class XI Multimedia SMK Negeri 2 Bandung. In this CAR, it uses observation sheets to measure student' motivation and using written test questions that have been validated by previous researchers to measure learning outcomes. The types of data taken in this study were: qualitative data (data about student and teacher activities) and quantitative data (data about student motivation and learning outcomes at the end of each cycle). This research consisted of 2 cycles, cycle I and cycle II.

In general, the development of multimedia in research consists of five stages, namely the stages of 1) Design, 2) Development, 3) Implementation and 4) Assessment.

2.2. Design Stage

The design used in this study was developed by Kemmis and McTagart. This design uses cycles, in each cycle there are four stages or steps. These stages include 1) Planning, 2) Action, 3) Observation, and 4) Reflection. The aforementioned activities are visualized in **Figure 1**.

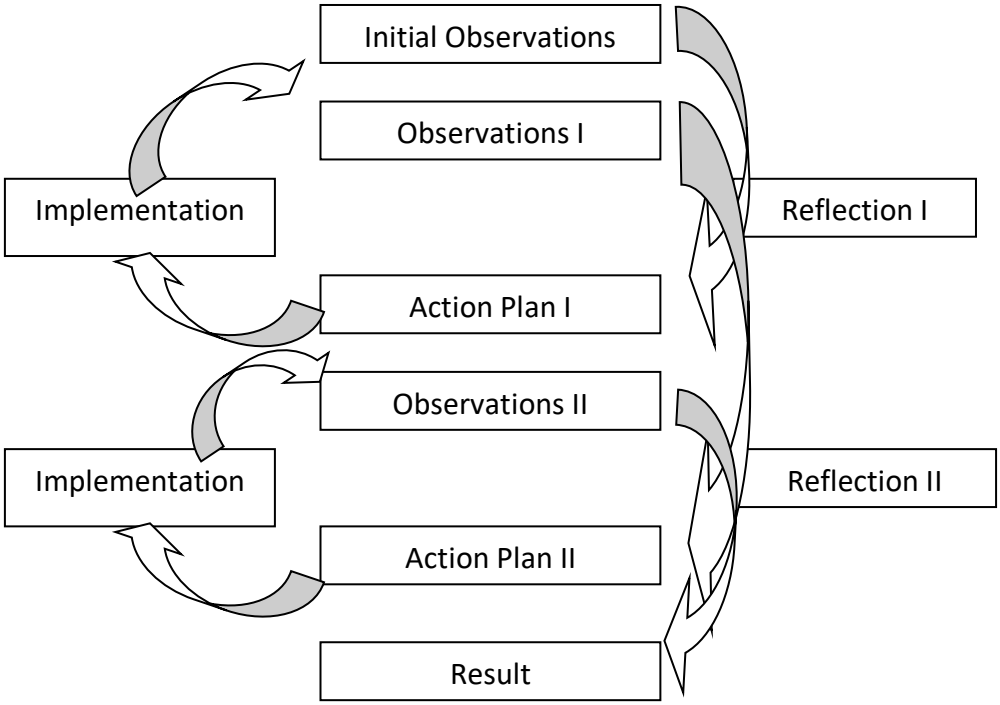

Figure 1. The Implementation Cycle of CAR Kemmis and Mc. Taggart.

The action cycle can be seen in the following description:

2.2.1. Planning Phase

This classroom action research consists of three cycles. Each cycle is carried out with one action according to the improvement to be achieved during learning. At the planning stage prepared are:

(i) Develop a learning implementation plan (RPP).
(ii) Prepare uploaded learning media in the form of modules
(iii) Develop assessment instruments.
(iv) Prepare relevant learning resources.

DOI: http://dx.doi.org/10.17509/xxxx.xxx
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2.2.2. Action Phase

The activities carried out in each action are interventions in the implementation of activities that are the teacher's daily duties. At this stage is the implementation of actions and preparations that have been planned before. Furthermore, in improving and seeing success in each cycle, what must be done are:

(i) Carry out actions according to the learning scenario (RPP).
(ii) Researchers carried out formative test form assessments.

2.2.3. Observation Phase

At this stage operationally it is to recognize, record and all matters related to the results and process of implementing the action or the impact in implementing the action. The purpose of this observation is to find out whether the actions taken have led to positive changes in learning activities.

(i) Collaborative teams with class teachers carry out observations with planned aspects.
(ii) Researchers tabulated the results of observations

2.2.4. Reflection Phase

The data obtained is then analyzed to then be reflected as an evaluation tool to improve the next cycle. And also to determine the conclusions or results of research. In the reflection stage, the researcher and the observer discuss the results of the action at the end of each action. The results are then reflected, and if necessary revise previous activities. The findings obtained are then used as a reference for the formulation of lesson plans to be carried out in subsequent activities

2.3. Setting and Research Subjects

2.3.1 Research Setting

This research was conducted at SMK Negeri 2 Bandung which is located at Jl. Ciliwung No. 4 Kelurahan Cihapit Bandung Wetan District, Bandung West Java 40114.

2.3.1 Research Subject

Research subjects according to Suharsimi Arikunto (2010) are sources of data in research, which can be people, places, or symbols. Subjects were 35 students in class XI Multimedia at SMK Negeri 2 Bandung, consisting of 24 male students and 11 female students.

2.4. Cycle I Implementation

Classroom action research procedures are planned in 2 cycles as follows:

2.4.1 Planning Phase in Cycle I

(i) Make an agreement with the leader of the research team as an observer and provide an explanation of the things that must be done by the observer and an explanation of the essence of the observation sheet instrument that must be filled in by the observer.
(ii) Apply for a research permit to the Principal of SMK Negeri 2 Bandung
(iii) Determine the subject matter to be used in research, namely applying graphic design and photography service products
(iv) Develop a syllabus of Creative Entrepreneurial Product Design subject with the application of the E-Learning method.

DOI: http://dx.doi.org/10.17509/xxxx.xxx
p- ISSN xxxx-xxxx e- ISSN 2774-7891

(v) Prepare Student Worksheets (LKS).
(vi) Prepare the instrument to be uploaded in the form of a cycle I test question sheet.
(vii) Prepare non-test instruments in the form of student and teacher observation sheets in learning.

2.4.2 Action Phase in Cycle I

(i) Give the observation sheet to the observer to fill out.
(ii) Carry out learning activities in Creative entrepreneurship Product Design subject using the E-Learning method.
(iii) Conduct a test to find out the success of student motivation and learning outcomes about applying graphic design and photography service products
(iv) Conduct learning evaluation.
(v) Closing learning by providing material reinforcement.

2.4.3 Observation Phase in Cycle I

(i) Record all learning activities that occur on the observation sheet as a source of data to be used at the reflection stage. The recording is done by the observers, namely the teacher in charge of teaching for the day.
(ii) Discussion with observers to clarify the results of observations on the observation sheet.
(iii) Observers make observations of the activities of students and teachers in learning Creative Entrepreneurship Product Design using the E-Learning method.
(iv) Observer fills in the observation sheet

2.4.4 Reflection Phase in Cycle I

(i) The teacher hopes that students pay more attention to the teacher's explanation when the teacher explains via Google Classroom.
(ii) Teaching and learning activities take place as expected by the teacher.
(iii) Students complete the evaluation according to the teacher's instructions.

The researcher analyzed all data collected from action research in cycle I. After the learning outcomes of students and observer observations had been reviewed, then in cycle II, the researcher repeated the activities carried out in cycle I. The findings in the reflection stage in cycle I were used to improve the syllabus and learning activity in cycle II.

2.5. Cycle II Implementation

2.5.1. Planning Phase in Cycle II

(i) Provide motivation to students in learning.
(ii) Guiding students to actively ask questions.
(iii) Creating a pleasant learning atmosphere, so that students do not feel tense.
(iv) Students are involved in online learning by applying the E-Learning method, namely Google Classroom.

2.5.2. Action Phase in Cycle II

(i) Students are asked to open Google Classroom on their laptops/smartphones.
(ii) Students log in to Google Classroom.
(iii) Students take attendance on the Google Plat Form.

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(iv) Conduct cycle II tests to determine the success of students' learning about graphic design and photography material
(v) Conduct learning evaluation.

2.5.3. Observation Phase in Cycle II

(i) In the learning process, observers make observations and observations according to the format provided.
(ii) Students are enthusiastic in participating in learning
(iii) Application of the E-Learning method in online teaching and learning such as giving tests and asking questions about the material being studied

2.5.4. Reflection Phase in Cycle II

(i) It is expected that all students play an active role in learning
(ii) It is expected that students understand online learning material
(iii) It is expected that students are able to work on questions uploaded by the teacher.
(iv) Achievement of mastery learning both classically and individually which will be seen from the test results of students.

2.6. Variable Operational Definitions

This classroom action research contains qualitative data and quantitative data. Qualitative data is in the form of descriptions of student' behavior during the learning process of productive creative entrepreneurship class while using E-learning method. Quantitative data is in the form of increasing the motivation and learning outcomes of students as indicated by test scores. Data sources were taken before, during, and after the action research was carried out. The data or information needed in this research was obtained in several ways, among others

2.6.1 Observation

The observation technique used in this research is participatory observation, in which the researcher is involved in the subject's activities. This technique is used to find data about the problems experienced by students in class. It is done to determine the level of student participation and to determine the level of teacher performance in using the E-learning method.

2.6.2 Learning Achievement Test

A pre-test and post-test will be given to the students. After knowing the subject's initial ability via pre-test, the researcher will employ the lesson regarding packaging products that use graphic design and photography, using the E-Learning method. After completing learning activity, the researcher then gave a post-test which consisted of packaging product questions using graphic design and photography. From these tests, the researcher will find out whether or not there is an increase in the subject after the action is taken using the E-Learning method.

2.7. Data Analysis and Processing Techniques

Data analysis and processing techniques are carried out qualitatively by categorizing and classifying data based on logical link analysis, then interpreted in the context of research problems. This activity seeks to bring out the meaning of each data obtained, so that the data

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is not only descriptive. In research with a qualitative approach, data processing and analysis is carried out continuously from the beginning to the end of the implementation of the action.

Quantitative data comes from cycle tests for students' PKK learning outcomes. After the quantitative data is obtained, the next step is to analyze the data. The calculation carried out as follows:

2.7.1 Data Processing for student learning outcome

Written tests are carried out every cycle, to find out the average learning outcomes of students in PKK learning using the E-Learning method.

(i) The formula used to calculate the average student learning outcomes is:

$$\overline{\boldsymbol{x}} = \frac{\sum \boldsymbol{x}}{\boldsymbol{n}}$$

Information:

$\bar{x}$: Grade point average
$\sum \boldsymbol{x}$: The total value obtained by students
$\boldsymbol{n}$: Number of students

(ii) The formula used to calculate the average student learning completeness is:

$$TB = \frac{\sum S \geq 75}{n} \times 100\%$$

Information:
$\sum S \geq 75$: The number of students who scored greater than or equal to 75.
n: Lots of students
100%: Fixed number
TB: Mastery learning

(iii) Calculating Increased Motivation and student learning outcomes

To find out the increase in motivation and learning outcomes of students classically from each cycle, it is done by calculating the difference in the average learning outcomes of students in cycle II and cycle I.

Data analysis can be done by looking at the difference in the average learning outcomes of students in cycles II and I. If the difference is positive (+), then there is an increase in motivation and learning outcomes of students through the use of the E-Learning method in PKK learning about applying Graphic Design and XI Multimedia class photography and the action hypothesis proved to be correct. Conversely, if the sign is negative (-), then the learning outcomes of students cannot be improved and the action hypothesis is proven wrong.

In addition to quantitative data, there is also qualitative data collected through observation sheets of students' and teachers' activities in class learning by an observer in the form of an open observation sheet. The observer must write a description of the results of his observations in the column provided according to the question items on the observation sheet. This qualitative data processing is done by concluding the observer's description of each question item. If the observer writes positive observations on learning, then the activity of the teacher or students in learning is in accordance with research expectations. If the

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opposite happens, then the activities of the teacher or students in learning are not in accordance with research expectations.

To find out the increase in motivation and learning outcomes in the class, the gain index formula with the symbol <g> according to Hake (gg) is used. And the formula can be seen in **table 2.1**.

$$<g> = \frac{\text{Score II} - \text{Score I}}{\text{SMI} - \text{Score I}}$$

Information

<g> : Indeks Gain
Score I : Score from cycle I
Score II : Score from cycle II
SMI : Maximum score

Table 2.1 Criteria Indeks Gains

INDEKS GAINS (G)	CRITERIA
g > 0,70	High
0,30 ≤ g ≤ 0,70	Medium
g < 0,30	Low

3.RESULT AND DISCUSSION

3.1 Planning Stage

At this stage, the planning has been carried out which includes: 1) Preparing 2-cycle lesson plans, 2) Setting up Google Classroom account and link as the learning medium 3) Preparing teacher observation sheets, student observation sheets and reflection sheets. The learning model used is a cooperative learning model (according to the mission of the 2013 curriculum) which prioritizes cooperation between students in seeking information on problems given by the teacher. The learning model is strengthened by the use of E-Learning media, namely Google Classroom which helps teachers and students in discussing both inside and outside the classroom. Prior to the implementation stage, the student was informed about Google Classroom and how to create an account with it. The example of the login page can be seen in **figure 3.1**.

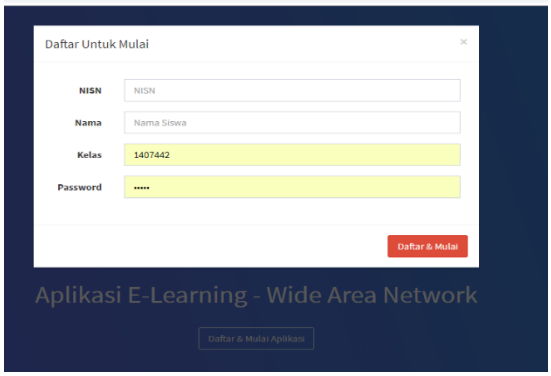

Figure 3.1 Homepage

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The teacher then gave a brief explanation on how to use the website. The student allowed the student to read the user procedure first, and then was given some minutes to ask question regarding the procedure. The user procedure page can be seen in **figure 3.2.**

Figure 3.2 User Procedure Page

3.2 Action and Observation Stages

Cycles I and II were held in two meetings each. At the beginning of each lesson the teacher motivates students by asking questions related to the material to be taught in the application of Graphic Design and Photography in Creative Entrepreneurship Product Design. The learning activities is carried out using Google Classroom. The purpose of using Google Classroom when learning takes place is to encourage students in expressing opinions in discussion. The material page can be seen in **figure 3.3.**

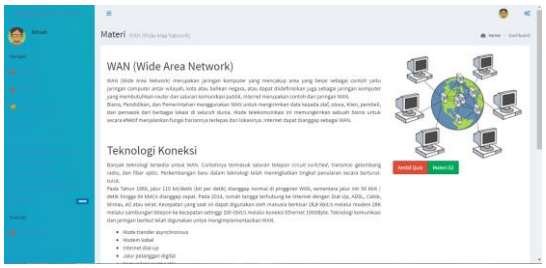

Figure 3.3 Material Page

The video regarding the materials were also given to provide the student' more explanation. The video page can be seen in **figure 3.4.**

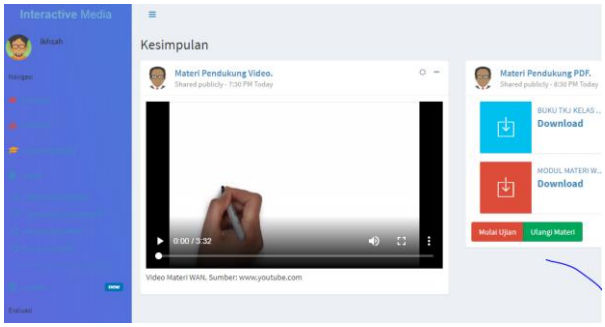

Figure 3.4 Videos Page

DOI: http://dx.doi.org/10.17509/xxxx.xxx
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At the end of cycle I and cyle II each, an evaluation was held to determine student mastery of the material that had been taught. The evaluation for cycle I consisted of 20 multiple choice questions related to previously studied material. The exercise page can be seen in **figure 3.4.**

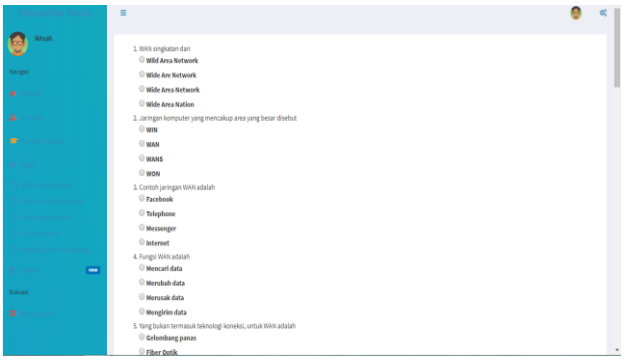

Figure 3.4 Exercise Page

3.3 Results

The description in this discussion reveals research findings based on data results, namely learning outcomes and student activity in online learning.

3.3.1 Student Learning Outcomes

After the research was carried out, the results were obtained, there was an increase in learning outcomes productive creative entrepreneurship. The result can be seen in **table 3.1.**

Table 3.1 Comparison of learning outcomes in cycle I and cycle II

NO	INFORMATION	BEFORE THE ACTION	AFTER ACTION	
			CYCLE 1	CYCLE 2
1.	Students who achieve the passing grade	20 Student 57,4% (35 Student)	27 Student 77,1 % (35 Student)	31 Student 88,5% (35 Student)
2.	Students who do not Reach passing grade	15 Student 42,8 %	8 Student 22,8%	4 Student 11,4%
	Average student	57,1%	77,1%	88,5%

Table 3.1 shows the difference in the average value in each cycle, from before and after using the Google Classroom application. The average value obtained after using the Google Classroom application was 88.5% compared to the average value before using Google Classroom which is only 57.1%, an increase of 31.4%. The number of students who achieved

DOI: http://dx.doi.org/10.17509/xxxx.xxx
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the Passing grade after using the Google Classroom application were 31 students and 4 students scored below the passing grade, compared to before using Google Classroom where only 20 and 15 students scored below the passing grade. The percentage of student completeness increased (cycle I of 77.1%, cycle II of 88.5%), with an increase in the average value of 57.1% (the average value of cycle I was 77.1 and the average value cycle II of 88.5%). This means that the success rate of using the Google Classroom application has had a major influence on increasing network (online) learning outcomes. The comparison using bar chart can be seen in **figure 3.1**

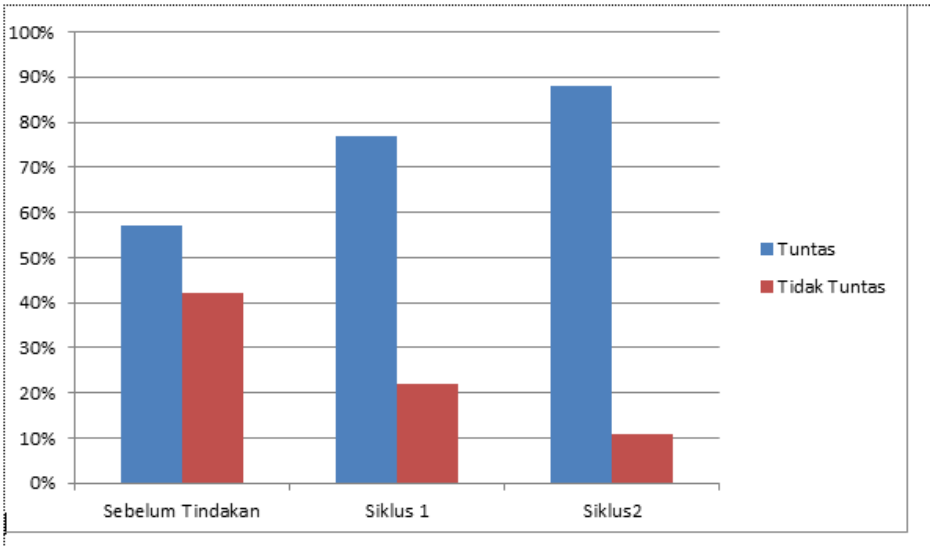

Figure. 3.1 Bar Graph of the comparison in student' learning outcomes in Cycle I and Cycle II

Based on the graph above, it is known that students who completed the Passing grade continued to increase from before the action which compromised of 20 students (57%) increased to 27 students (77%) in cycle I then increased again to 31 students (88%) in cycle II. The process of increasing per cycle is seen from the results of individual questions in cycle I and then seen from the pretest scores carried out in cycle II.

3.3.2. Student activity

The researcher also observe the activeness of the student during class activities using observation sheets. The indicator of active learning can be seen from: a) answering questions, b) asking questions, ideas or ideas, c) working on questions ordered by the teacher through E-Learning d) group presentations, e) rebutting or agreeing with other students' ideas. From the indicators that have been mentioned, a value is then made based on the activeness of student learning. From the results of the scores, students are categorized as very active students, moderately active students, and less active students. The observation was carried out in 2 cycles. The comparison of the activities can be seen in **table 3.2.**

DOI: http://dx.doi.org/10.17509/xxxx.xxx
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Table 3.2 Comparison of Student Activity in Cycle I and Cycle II

NO	INFORMATION	BEFORE ACTION	AFTER ACTION	
			CYCLE I	CYCLE II
1.	Students are very active in learning	3 Student (35 Student) (8%)	6 Student (35 Student) (17%)	9 Student (35 Student) (25%)
2.	Students are active in learning	4 Student (35 Student) (11%)	7 Student (35 Student) (20%)	11 Student (35 Student) (31%)
3.	Students are quite active in learning	8 Student (35 Student) (22%)	4 Student (35 Student) (11%)	3 Student (35 Student) (8%)
4.	Students are less active in learning	10 Student (35 Student) (28%)	9 Student (35 Student) (25%)	5 Student (35 Student) (14%)

From table 3.2, it can be concluded that there was an increase in student activity towards class XI Multimedia students of SMK Negeri 2 Bandung in PKK learning from before class action until after class action research was carried out.

The comparison using bar chart can be seen in **figure 3.2**

DOI: http://dx.doi.org/10.17509/xxxx.xxx
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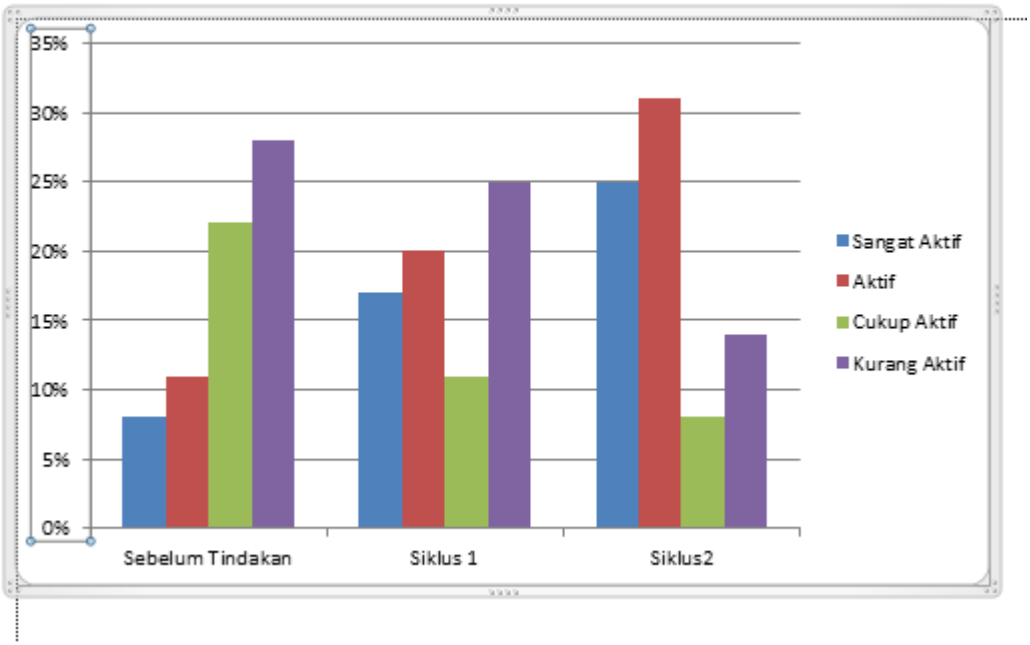

Figure 3.2. The comparison of Student' Activeness in Cycle I and Cycle II

From the graph above it can be seen that in the learning process each cycle has increased. In cycle I, students who were very active in the learning process increased by 14%, students who were active in the learning process increased by 17%, students who were quite active decreased by 8% and students who were less active decreased by 11%.

In cycle II, students who were very active experienced an increase of 10% when compared to cycle I (cycle II by 25%, cycle I by 17%), students who were active increased by 22% when compared to cycle I (cycle II by 31%) , cycle I by 20%), students who were quite active decreased by 3% when compared to cycle I (cycle I by 11%, cycle II by 8%) and students who were less active decreased by 11% when compared to cycle I (cycle II by 25% cycle I by 14%).

3.4 Discussion

Overall, after the implementation of online-based learning due to the COVID-19 pandemic on E-Learning media, it can improve student learning outcomes and effective enough to improve student learning outcomes. This implementation stage has been adjusted to the learning approach used so far, namely the collaborative learning approach.

In order to explain the teaching material better, the teacher must know the context of the core of each material being studied so that the material conveyed can be accepted by students. The first step is to make teaching materials that have been adjusted and can be understood by students. Then the material is uploaded to the E-learning media, in this context is Google Classroom. The material is presented in pdf form and in videos, in which the student can choose which types of file they considered is easier. The E-Learning website also provides a comment column which aims to open up space for discussion between teachers and students, so the students can ask about material that is considered difficult and share their opinion with their peers.

The increase in each cycle can be seen based on the value of learning outcomes with the passing grade above 75 (>75). From the results, it is known that the implementation of online-

DOI: http://dx.doi.org/10.17509/xxxx.xxx
p- ISSN xxxx-xxxx e- ISSN 2774-7891

based learning methods, students can learn easily, students also feel happy and comfortable with the ease of accessing learning material via online.

4. CONCLUSIONS

There is an increase in the use of E-learning media which can be seen from the results of the data collection instrument carried out by researchers. The increase in student learning outcomes after using E-learning media can be seen from the results of the average gain. The student also observed to be more active while using E-learning.

Based on the results that have been achieved in the research that has been carried out by researchers, the application of E-Learning can improve learning outcomes during the COVID-19 pandemic. E-Learning activities also encourage the student for more active learning. This supports the acceptance of the initial hypothesis, namely the application of the E-Learning learning model can increase motivation and learning outcomes in class XI Multimedia students in the subject of entrepreneurial creative products.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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DOI: http://dx.doi.org/10.17509/xxxx.xxx
p- ISSN xxxx-xxxx e- ISSN 2774-7891