



# The Effectiveness of Google Classroom in the Flipped Classroom Model for English Subjects in Vocational School

Devi Larasati<sup>1</sup>✉ Haryono<sup>2</sup>

<sup>1, 2</sup> Department of Educational Curriculum and Technology, Faculty of Education,  
Universitas Negeri Semarang, Semarang, Indonesia.

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## Abstrak

Penelitian ini bertujuan mengetahui sejauh mana keefektifan Google classroom sebagai media pembelajaran berbasis e-learning dalam model Flipped Classroom untuk meningkatkan hasil belajar siswa pada mata pelajaran bahasa Inggris di SMK Ibu Kartini kota Semarang. Penelitian ini menggunakan pendekatan kuantitatif dengan metode penelitian eksperimen. Desain penelitian ini menggunakan pola quasi experimental design dengan model non-equivalent control group design. Pemilihan sampel penelitian ini dengan teknik simple random sampling. Alat yang digunakan untuk mengumpulkan data pada penelitian ini adalah Tes dengan soal pilihan ganda sebanyak 50 butir soal. Teknik analisis data yang digunakan yaitu uji independent sampel t-test dan uji N-gain score. Hasil uji hipotesis menunjukkan adanya perbedaan yang signifikan hasil belajar antara kelas eksperimen dan kelas kontrol. Dengan demikian dapat disimpulkan bahwa pemanfaatan Google classroom sebagai media pembelajaran berbasis e-learning dalam model Flipped Classroom terbukti efektif meningkatkan hasil belajar siswa pada mata pelajaran bahasa Inggris.

## Abstract

*The purpose of this study is to determine the effectiveness of Google classroom as an e-learning-based learning medium in the Flipped Classroom model to improve student learning outcomes in English subjects at Ibu Kartini Vocational High School, Semarang City. The research method used in this study was quantitative approach, a quasi-experimental design with a non-equivalent control group design model. The sample selection of this research is simple random sampling technique. The tool used to collect data in this study was a test with 50 multiple choice questions. The data analysis technique used is the independent sample t-test and the N-gain score test. The results of the hypothesis test showed that there was a significant difference in learning outcomes between the experimental class and the control class. It means that the use of Google classroom as an e-learning-based learning medium in the Flipped Classroom model proved effective in improving students' learning outcomes.*

## PRELIMINARY

The success of education can be seen through learning outcomes in learning achievement. A learning is said to be successful when the learning objectives can be achieved. In this case the ability of teachers as educators is very influential in determining the accuracy of the selection of media and learning models. In education, a learning process is designed to teach students, this makes the position of students as learning subjects. Therefore, the learning process is usually more focused on an activity carried out to get maximum learning outcomes. Learning outcomes are changes in behavior or abilities obtained by students after going through learning activities, in a broader sense that includes cognitive, affective and psychomotor fields (Mansur, 2018).

Effectiveness in the Big Indonesian Dictionary (KBBI) means a condition that influences or is successful about a particular business. Knowing the effectiveness in a learning is important because by knowing the effectiveness we can see the extent to which a lesson can achieve the goal. With regard to learning, effectiveness can be seen through the achievement of the instructional objectives that have been designed. Learning can be said to be effective or not seen through the results that have been achieved by students such as an increase in students' knowledge and skills after participating in learning.

Slavin (2006) states that there are four indicators in determining the effectiveness of learning, including: 1) the quality of learning, which can be seen from the achievement of instructional learning objectives after the application of learning 2) the suitability of the level of learning, this can be seen in the indicators of achievement contained in the syllabus, or an annual program or semester program that has been planned by the teacher 3) incentives, namely the way the teacher provides motivation that can be seen from the responses and interests of students during the learning process and 4) time, which is about time efficiency by the teacher in the learning process.

Along with the development of science, especially in the scope of education, now many different learning strategies have been found. There are various kinds of learning strategies such as expository learning strategies, inquiry learning strategies, problem-based learning strategies and so on. Learning strategies are something that educators need to achieve learning

goals. The existence of learning strategies allows educators to optimize learning through approaches, methods used, media used to activities carried out in the classroom.

In the teaching and learning process, teachers are required to be creative in using learning methods and models so that students become more active in learning. Based on this, the selection of appropriate learning methods and models is important to obtain optimal learning outcomes when applied in the learning process according to predetermined goals. This is in line with the opinion of Warsihna (2013) which says that teachers who are creative in using learning models for the learning process are able to optimize all the potential possessed by students. Determining the right learning methods and models can be done by analysing learning needs such as learning objectives to be achieved, student learning styles, learning facilities and learning environments. Various learning methods that have been used in the classroom are conventional learning methods such as lecture, discussion, and question and answer methods. Along with the times, it is possible that learning methods can be combined with increasingly sophisticated technology in the world of education. This can be a solution in completing the limitations or difficulties in the learning process.

The learning paradigm has more or less changed over time in accordance with science and technology (IPTEK). Currently, the view of learning has shifted to the constructivist paradigm, where the learning process tends to lead to interpreting the knowledge acquired by itself. The current educational paradigm shift emphasizes activities whose orientation is student-centered rather than the teacher centred learning. So the learning process is not only fixated on the teacher, but students can also be more active in learning activities.

Based on this, the lecture method is considered less innovative in today's era because students are only fixated on what is conveyed by the teacher so that it can make students passive. That is why teachers as educators should be able to provide innovation in the learning process in order to make students more active and have high motivation in learning. This is in line with the opinion of Grafura and Wijayanti (2014, p. 72) which states that in realizing learner-centered learning, appropriate methods are needed. Therefore, teachers are not only required to master their competence, but also the appropriate

learning methodology.

Student Centered Learning (SCL) according to Chandra et al. (2016, p. 52) has an understanding that is an approach that empowers students or students to be the center of attention (student center) during the ongoing learning process. The learning approach requires students or students to play an active role in the learning process, namely by interpreting their knowledge independently. In the SCL approach, a teacher as an educator is no longer the center of learning resources for students, but the teacher acts as a facilitator to help what students or students need in the learning process and explore their potential. When viewed from this understanding, Flipped Classroom is one of the learning models that can be used in this approach.

The Flipped Classroom model according to Damayanti and Utama (2016, p. 3) states that this learning model provides what students usually do in class and what students usually do as homework is exchanged or reversed. Students in the learning process when outside the classroom can explore the material first before entering class, then when in class they do more exercises or discuss or solve problems accompanied by the teacher as a facilitator. Herreid & Schiller (2013) suggested that the main principle in the Flipped Classroom learning model is problem solving done by students which usually becomes homework should be done with the guidance of the teacher in class. Shyr and Chen (2018) in their research also mention that this Flipped Classroom learning model has been applied all over the world, both in schools and colleges, for various fields of study. This Flipped Classroom learning model provides broad opportunities for teachers and students to interact so that the teaching and learning process is more active.

Mujiono (2021) in his journal concludes that the application of the Flipped Classroom learning model provides benefits for both teachers and students, because with this learning model the available learning time capacity is able to accommodate various students with different abilities and learning speeds. In the period of 2012, FLN (Flipped Learning Network) conducted a study on teachers who implemented Flipped Classroom in junior and senior high schools. This study shows that 99% of teachers who implement Flipped Classroom will continue to use it, 67% report an increase in student performance and 80% report an increase in student engagement (Schmidt & Ralph, 2016). The

Flipped Classroom learning model in its application requires the right learning media to be used as an intermediary to deliver teaching materials or materials to students when outside the classroom. In addition, Flipped Classroom is very suitable for the condition of students as Generation Z.

Students are now a digital generation. The equipment such as cell phones, tablets, iPad, and laptops they have is more sophisticated than the computers available in schools. They can interact with their friends and with educators while doing assignments or experimenting in the laboratory (Rediansyah, 2021) their iPad, and laptops are more sophisticated than the computers available in schools. They can interact with their friends and with educators while doing assignments or experimenting in the laboratory (Rediansyah, 2021) their iPad, and laptops are more sophisticated than the computers available in schools. They can interact with their friends and with educators while doing assignments or experimenting in the laboratory (Rediansyah, 2021)

The development of Information and Communication Technology (ICT) brings something positive to the world of education in the era of globalization. The importance of ICT is also supported by the statement of Holyes & Lagrange (2010) which states that in the world of education the use or use of technology is the most important or influential thing. This is because the development of ICT has contributed significantly to the world of education. The use of ICT that is integrated into learning can be an innovation and the right solution to optimize the learning process. Through ICT we can share information widely, quickly, effectively and efficiently to recipients of information.

Rusman et al. (2012, p. 5) stated that entering the current ICT era, the need for and importance of using ICT in teaching and learning activities was felt to improve the quality of learning as expected. Based on this, it can be concluded that ICT is able to improve the quality of education through its benefits, namely by opening the widest possible access to knowledge. Through the integration of ICT in the learning process, teaching and learning activities can run effectively and efficiently. We can easily find learning resources quickly through the internet.

One of the uses of ICT in the learning process is as a learning medium to support the teaching and learning process. In accordance with the times, teachers as facilitators are required to

be able to integrate ICT in the learning process in order to improve the quality of learning. Learning media used by teachers vary according to needs. The ability of teachers to use appropriate and varied learning media is considered necessary to facilitate the learning process and attract students' attention to learning so that students' learning motivation increases. In addition, the use of ICT as a medium of learning can also overcome the problems of the learning process.

English subjects are subjects which in practice require a lot of time for students intensively to understand the material as a whole and can master language skills through continuous practice. Discussing language skills, there are four types of basic language skills including listening, reading, speaking and writing. Susini & Ndruru (2021) say that language skills such as listening, reading, speaking and writing are better improved through intensive exercises that are routine and repeated, including communicating with oneself and with others. Listening to recordings is an effective way to improve listening skills. In addition, learners can get a learning stimulus through the use of various electronic media,

So far, various studies have been carried out to reveal a model, approach, strategy method and technique to train skills in the learning process. One study conducted in Australia found that computers are a technology that can be used as a medium of learning during contact sessions with language learners and their experiences with web-based language learning activities (Van Rensburg & Son, 2010). In addition, inviting learners to carry out intensive language learning activities outdoors also helps improve their language learning abilities (Stanat et al., 2012).

However, after the researchers conducted observations at school, the reality found in the field was often not in accordance with what was expected. Based on the observations made by the researcher at Ibu Kartini Vocational School in Semarang in October 2018 when interviewing the English subject teacher, Ibu Yusti, according to the conditions in learning English at the school, it was known that student learning outcomes after attending lessons still tended to be low. This can be seen from the average daily test results obtained by students in English subjects that do not meet the Minimum Completeness Criteria (KKM). Classical student learning completeness in class X English subjects

is only about 43% with an average score below 70. Student learning outcomes cover aspects of knowledge (cognitive) and language skills such as speaking, listening, reading and writing skills that must be mastered by students. However, teaching and learning activities (KBM) carried out in schools have not been carried out optimally. Many teachers in delivering material to students still use conventional methods such as the lecture method.

In addition, the use of learning media in the classroom only utilizes existing media such as books, worksheets, stationery and PowerPoint slides in their learning activities. Students in the learning process only listen to the material presented by the teacher so that students are passive in their learning activities. Meanwhile, according to students when interviewed by researchers, they revealed that teaching and learning activities that had been carried out by teachers were deemed less attractive to students in learning and seemed monotonous, this happened because students were only fixated on what was taught by the teacher in the classroom.

Not only that, teaching and learning activities in schools have limited time, limited time for learning in the classroom causes the material not to be delivered optimally by the teacher. In addition to providing a lot of material to students, the teacher must also provide a lot of practice. The time used to deliver the material and exercises is not enough so that the learning process does not take place optimally. Students in the training process also need to be accompanied by a teacher to provide appropriate direction when learning difficulties occur. Students admitted that they did not master the material in English subjects so that student learning outcomes in these subjects tended to be low.

Conditions in schools currently have quite complete facilities. The school already has LCD projectors in every classroom, besides that the school also has a library and computer laboratory equipped with internet access (Wi-Fi) which allows the implementation of E-learning to support the learning process. But the reality on the ground is currently the teachers at the school have not implemented E-learning in learning, this happens because of the lack of knowledge and ability of teachers about E-learning. In addition, the existing resources have not been fully utilized optimally by the teacher as a medium to support the learning process. Conditions in schools currently have quite complete facilities.



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In 2020 the world is faced with a problem, namely the COVID-19 pandemic. This is related to health problems caused by the corona virus, where many countries are affected, including Indonesia. These problems automatically affect the world of education where the government issues policies by implementing social distancing to minimize the spread of this corona virus. Therefore, teaching and learning activities in schools and universities are carried out remotely (online). Distance learning, of course, requires media as a means of teaching and learning activities. Therefore, in carrying out learning, it is necessary to have a platform (E-learning) as a medium to support online learning. There are various alternative online media used by teachers in the distance learning process such as WhatsApp groups, zoom meetings, google meet and so on. However, every media is not necessarily effective for distance teaching and learning.

Hartatik et al. (2021) suggest that the delivery of learning with E-learning is one of the ways of learning by utilizing internet technology to reach learning resources with a broad scope and rich in learning content. One of the e-learning that can be used for teaching and learning activities is Google classroom. Hakim (2016, p. 2) defines Google classroom as an internet-based service provided by Google as an E-learning system. This service is designed to help teachers create and distribute assignments to students paperless. Therefore, Google Classroom is an online learning system that allows the creation of virtual classes. Teachers can create virtual classes with Google classroom as an online learning medium, through this teacher can share learning materials, make announcements, quizzes or questions, assignments to students and allow feedback from both students and teachers. In addition, Google Classroom can also be integrated with YouTube which can be used by teachers as a learning resource for students. According to Hartatik et al. (2021) the use of Google classroom

for learning can make it easier to evaluate the implementation of the teaching and learning process both outside and in the classroom.

Therefore, this research is quite important as a means to ensure that Google classroom has had a positive contribution, especially to the current discourse of blended learning as an integral part of educational technology. Since blended learning has been perceived as having a positive trend nowadays and, in the future, the research through which the quality learning could be afford optimally is important.

## METHOD

This study uses a quantitative approach with experimental research methods, namely the research method used to find the effect of certain treatments. The researcher used a quasi-experimental design with a non-equivalent control group design model where this study had a control group and an experimental group that were selected randomly, then given a pre-test to determine the initial state of whether there was a difference between the experimental group and the control group (Sugiyono, 2015, p. 76).

This research was conducted at Ibu Kartini vocational school, which is located at Imam Bonjol Street No. 199, South Pendrikan, Central Semarang, Semarang City, Central Java Province. The time of the research was carried out in May 2020 and was carried out continuously until it was completed. The population in this study were all students of class X Ibu Kartini vocational school Semarang in the 2019/2020 school year. Determination of the sample of this study using probability sampling technique, which provides equal opportunities for each member of the population to be selected as a member of the sample.

The instrument used in this research is a test question in the form of an objective test of 50 questions with four alternative answers. The test questions that are used as instruments are first analyzed for items such as validity, reliability, level of difficulty and discriminating power. The data analysis technique used is descriptive analysis which consists of prerequisite tests, namely the homogeneity and normality test of the data. The hypothesis test of this research uses the difference test of two averages (t test) with independent sample t-test and n-gain score test.

## RESULT AND DISCUSSION

The purpose of research on the effectiveness of Google Classroom as an E-learning-based learning medium in the Flipped Classroom Model for English subjects at SMK is to test the effectiveness of Google Classroom as an E-learning-based learning medium in the Flipped Classroom model for English subjects at Ibu Kartini Vocational School, Semarang.

### A. Two-Mean Difference Test (t-test)

The two-average difference test was carried out to see if there was a difference in the average learning outcomes between students who used Google classroom media as E-learning in the Flipped Classroom learning model and students who used WhatsApp group media in English subjects. After the data on student learning outcomes (pre-test and post-test) were declared to be normally distributed and homogeneous, then the difference in the average student learning outcomes before being given treatment (initial ability) and student learning outcomes after being given treatment (treatment) was calculated between the control classes. and experimental class. The t-test in this study was assisted by the SPSS 23 statistical analysis program by using the Independent Sample t-test to test two different data.

The t-test of the pre-test values of the control class and the experimental class was carried out using the SPSS 23 program with Independent Sample T-test. In this test the initial hypothesis ( $H_a$ ) is that there are differences in learning outcomes between the control class and the experimental class. While  $H_a$ , that is, there is no significant difference in learning outcomes between the control class and the experimental class (relatively the same). The decision on the results of this t test is determined by the significance value or Sig. (2-tailed), if t-count > t-table at significance level = 5% and p value < 0.05, then  $H_0$  is rejected and  $H_a$  is accepted, and vice versa.

This is done to determine the initial conditions or conditions of the two groups. Based on table 4.4, it is known that the results of the calculation of the t-test pre-test values for the control class and the experimental class with a 95% confidence level or 5% significance value obtained the Sig value. (2-tailed) of 0.101. This shows that the value of  $p > 0.05$  is  $0.101 > 0.05$  which means  $H_a$  is rejected and  $H_0$  is accepted. From these re-

**Table 1** Results Differences in Two Means (t-test)

Data	Result	Sig.
<i>Pre-test</i>	0.101	0.05
<i>Post-test</i>	0.000	0.05

sults, it can be concluded that the control class and the experimental class have relatively the same initial ability in cognitive aspects before being given treatment.

While the calculation of the t-test value of the post-test control class and the experimental class was carried out to determine whether there was a significant difference in cognitive learning outcomes between the control class and the experimental class after being given treatment. The results of this t test in making decisions are determined by the significance value or Sig. (2-tailed), if the value of Sig.  $p < 0.05$  at the 5% significance level, then  $H_0$  is rejected and  $H_a$  is accepted, and vice versa. The results of the calculation of the t-test value of the post-test control class and the experimental class obtained the value of Sig. (2-tailed) of 0.000 with a 95% confidence level or 5% significance value. From the results of the calculation of the post-test value obtained p value < 0.05, namely  $0.000 < 0.05$ , it can be concluded that  $H_0$  is rejected, and  $H_a$  is accepted.

### B. Boost Test (N-Gain Test)

After knowing that there was a significant difference between the average scores of the two groups through the independent sample t-test, the researchers then conducted the N-Gain test (Normalized gain) to determine the effectiveness of using Google classroom media in the Flipped Classroom model to improve student learning outcomes in language subjects. England. The following is the result of the calculation of the N-Gain test for the two groups.

Based on the results of the N-Gain Score test calculation in the table above, it shows that the average N-Gain Score for the experimental class using Google classroom media in the Flipped Classroom model is 68.81%, which is included in the category of quite effective with the N-Gain value. Minimum score 50% and maximum 90%. Meanwhile, the average N-Gain Score for the control class, which uses the WhatsApp group media, is 42.58%, which is included in the less effective category with a minimum N-Gain Score value of 17.65% and a maximum of 56.52%.

**Table 2** N-Gain Score Test Results

Group	Pretest Average	Posttest Average	N-Gain (%)	Interpretation
<i>Experiment</i>	62.93	88.60	68.81	Effective enough
<i>Control</i>	61.20	77.87	42.58	Less effective

## DISCUSSION

E-Learning is an information technology that is specifically developed to share knowledge in achieving learning objectives to be effective and efficient (Ng, Brydges, & Lazarou, 2016). The Flipped Classroom learning model aims to optimize learning in teaching and learning activities (Wang, 2017). By utilizing e-learning as a learning medium in the Flipped Classroom model, it is very important to improve student learning outcomes both cognitive, affective and psychomotor students. The integration of ICT in the learning process is one solution to overcome learning problems in schools. Google Classroom is a platform from Google that can be used as e-learning for learning outside the classroom that allows educators to transfer material in various forms, one of which is in the form of learning videos. Learning videos prepared by educators are used to complete the teaching and learning process in the classroom. Learning content through videos distributed online allows students to learn independently both online and offline (Pinontoan, Walean, & Pinontoan, 2020).

Based on the opinion above, it can be concluded that the use of e-learning media using the Google classroom platform with the Flipped Classroom learning model is the right combination to obtain optimal results in learning. In addition, the use of e-learning media such as Google classroom can also make learning more effective because students can access and carry out learning activities anytime and anywhere, either through learning videos or other teaching materials that have been provided by online teachers. The Flipped Classroom model can help students become more active because the learning activities are student-centered so that learning becomes optimal.

The process of implementing English learning at Ibu Kartini Vocational School in Semarang during the pandemic only used WhatsApp groups for communication and sharing teaching materials without using e-learning which was deemed not effective for teaching and learning activities so that student learning outcomes were not optimal. This can be seen in the imple-

mentation of learning English in the class-room. Based on the results of interviews conducted with teachers of English subjects, it shows that the learning process by utilizing Google classroom as an e-learning-based learning medium in the Flipped Classroom model for class X students at Ibu Kartini vocational school, Semarang is quite good. This is indicated by the level of enthusiasm and student learning outcomes in participating in teaching and learning activities using Google classroom which is carried out before learning in class. In addition, students are also more active in discussion activities and exercises to improve English skills in the Flipped Classroom learning model which is carried out in class. The level of student independence also increases in the learning process using these media and learning models, this can be seen from the ability of students to find learning resources and operate Google classroom media in the learning process.

The beginning of the learning process by using Google classroom as an e-learning-based learning media requires understanding through prior socialization to subject teachers and students at school. Based on the analysis of the initial data in this study, the students' pre-test scores in the cognitive aspect of English subjects at Ibu Kartini vocational school were carried out in class X RPL 1 as the experimental group and class X RPL 2 as the control group.

After the researchers processed the research data, the results of the calculation of the students' pre-test scores obtained an average of 61.20 in the control class and an average of 62.93 in the experimental class. Before testing the research hypothesis, a normality test was first performed to determine whether the data obtained were normally distributed or not. The normality test in this study used the Kolmogorov-Smirnov test with the help of the IBM SPSS 23 statistical analysis program. The results of the normality test of the two groups pre-test data obtained a significance value of 0.200 for the pre-test data in the control class and a significance value of 0.120 for the pre-test data. -test on the experimental class. The conclusion from the normality test of the pre-test data of the two groups was declared to be normally distributed,

Furthermore, in addition to the normality test, the researcher also conducted a homogeneity test as a condition for further testing, namely testing the research hypothesis. This is done with the aim of knowing whether the data obtained have the same or homogeneous varian-

ce. The homogeneity test in this study was calculated using Levene's Test (F Test) with the help of the IBM SPSS 23 statistical analysis program. The results of the homogeneity test of the pre-test data for both groups obtained a significance value of 0.130 ( $p > 0.05$ ), based on the results of these calculations, it can be concluded it can be said that the pre-test data of the control group and the experimental group have the same variance, or it can be said that before being given treatment both samples have the same initial conditions or level of ability. Therefore,

Before treatment was carried out in the control group and the experimental group, first giving a pre-test to both groups to determine the initial conditions. Based on the results of calculations with t test obtained nt table value on df 58 with probability 0.05 is 2.001 and p-value is 0.101. This means that the p value  $> 0.05$  ( $0.101 > 0.05$ ). These results indicate that the control group and the experimental group have relatively the same initial ability (cognitive aspect) before being given treatment (treatment). It is known from the results of tests conducted previously that there are still many students who get scores below the minimum completeness criteria (KKM), which is below 70 in English subjects. This means that the level of students' ability in learning English is still low. This can be caused by various factors such as problems in the learning process. One of them is the selection of media with the right learning model.

In accordance with the activity design that had been determined previously by the researcher, the learning process of the two groups was carried out differently. In the experimental class, the researcher gave treatment, namely the teacher in the learning process using the Google classroom platform as an E-learning-based learning media with the Flipped Classroom learning model. While in the control class, the teacher in the learning process uses the WhatsApp group media.

Pre-test and the post-test given to students in the form of an objective test in the form of multiple choice with a total of 50 questions with 4 (four) alternative answers. Before being used as a research instrument, the researcher had consulted the subject teacher and approved the supervisor. The questions that have been compiled are then tested first to determine their feasibility, namely by testing reliability and validity, then item analysis is also carried out by calculating the level of difficulty and discriminating power to determine the quality of the

questions. Based on the test results, there were 9 items which were declared invalid from the 60 items. So, the number of questions used for the test questions of the two groups as re-search instruments consisted of 50 multiple-choice questions.

After giving treatment or treatment in the experimental class by using Google classroom as a learning medium based on E-learning with the Flipped Classroom model and in the control class with an-other online media, the WhatsApp group, the researcher gave a final test (post-test) to measure the learn-ing outcomes of the two groups. after being given treatment. Based on the post-test results that have been calculated using the SPSS 23 statistical analysis program, the control class average results show a number of 77.87 with a standard deviation of 3.44. While in the experimental class, the average result was 88.60 with a standard deviation of 3.32.

The results of the calculation of the pre-test data in the experimental class obtained an average of 62.93 while the average post-test score was 88.60. This shows an increase in the value from the pre-test results to the post-test results, which is 25.67. Meanwhile, based on the results of hypothesis testing, name-ly the t test and N-Gain test using the IBM SPSS 23 statistical analysis program. Through the hypothesis test, it can be concluded that there is a difference in the effectiveness of the media between the experimental class and the control class. This can be seen from the acquisition of the independent sample T-test with a significance value (p value) of  $0.000 < 0.05$ . ( $p = 0.000 < 0.05$ ). Judging from the description,

In addition, after the independent sample T-test was carried out in both groups, the researchers calculated the N-Gain Score test to determine the extent of the effectiveness after being given treatment. The results of the N-Gain Score test calculation show that the average N-Gain Score for the experimental class using Google classroom media in the Flipped Classroom model is 68.81%, which is included in the category of quite effective with a minimum N-Gain Score value of 50% and 90% maximum. Meanwhile, the average N-Gain Score for the control class, which uses the WhatsApp group media, is 42.58%, which is included in the less effective category with a minimum N-Gain Score value of 17.65% and a maximum of 56.52%.

Thing the shows that the use of appropriate learning media can help the learning process that makes students' cognitive and skills



develop. As stated by Tafonao (2018, p. 105) which says that learning media is a tool in the learning and teaching process to stimulate students' thoughts, attention, feelings, and skills or abilities so that they can encourage the learning process. The selection of E-learning media in the Flipped Classroom learning model is said to be appropriate, because Flipped Classroom is a reverse learning model. So, the E-learning media in this learning model can be used as a medium/intermediary to distribute materials and learning resources to students.

E-learningIt can be said that one of the innovations in the world of education that utilizes technology in improving the quality of learning. According to Munir (2009, p. 165), E-learning is a process where learning is carried out through a network (network), besides that E-learning is able to provide teaching materials and store learning instructions that can be accessed anywhere and anytime. Therefore, learning activities that are usually carried out in the classroom make students bored, with this learning technology it can bring changes to student learning activities and motivation for the better. The use of technology such as Google classroom in the Flipped Classroom learning model is able to increase students' motivation and ability to capture or understand the material provided by the teacher. The use of online media helps teachers in providing various forms of teaching materials or abundant materials as learning resources for students. This is in line with the research of Bariah and Sidik (2019) in their journal which says that E-learning has proven to be effective in being used in the teaching and learning process to improve student understanding.

Through e-learning learning media such as Google classroom, the learning process becomes easier. Students can access learning materials and take online classes with the internet anytime and anywhere. The existence of online learning media makes student learning activities more flexible because it is not limited to space and time so that learning is effective. In addition, students can also improve their technological literacy skills because students are required to be able to explore information or use technology. This is in line with the opinion of Nurfalah (2019) who stated that optimizing the Google Classroom feature has a good impact on current learning, including not being limited by space and time, the learning materials needed are easier to access, and able to train data literacy and technology literacy skills. Google clas-

sroom can be used as an efficient, effective, and interactive learning medium to support distance learning. The use of Google Classroom is one of the new learning media solutions that can create ease of learning. As the results of Maharani and Kartini's (2019, p. 171) research which stated that almost more than 60% of students agreed that learning using Google classroom was considered effective because the learning process could be done anytime and anywhere.

According to the research, it was found that the achievement of the experimental group for student learning outcomes obtained higher scores than student learning outcomes in the control group. This happens because during the learning process using E-learning media with the selection of the right learning model in addition to honing students' skills can also expand students' opportunities in developing their knowledge by accessing widely available learning resources through E-learning media connected to the internet network so that students can freely study the material. The use of E-learning media with the concept of a reverse learning model (Flipped Classroom) in schools can be said to be an innovation in learning activities by teachers or educators in schools.

The use of technology that is integrated into the learning process can increase the effectiveness of learning. This is in accordance with the theory of technological determination according to McLuhan (in Pamungkas and Hapsari, 2019) which states that technology can determine and shape the way each individual thinks and behaves in society. That is, the technology that is present can change the behavior of each individual and will continue to dynamically adjust to needs. In accordance with the concept of technological determination, changes in individual behavior can occur in the teaching and learning process because technology itself has a positive impact such as the effectiveness of teaching remotely which can minimize costs and time, communication that is not limited by space and time and easily utilizes all existing features. in Google classroom.

Flipped Classroom model learning is basically a learning model that applies reverse learning. Flipped Classroom encourages students to be more active when in class, this is because students have previously studied the material that has been previously given by the teacher through E-learning which can be accessed outside the classroom so that students when in class already know or study the content of the material. .

This reverse learning model emphasizes repetition of previously studied material and increases practice or practice when face to face in the classroom. This makes students play an active role in the learning process and are accompanied by teachers as facilitators so that student learning outcomes and skills improve for the better. In accordance with the findings of Supriati and Febriani (2021) in their research, they concluded that the impact of learning Indonesian using Flipped Classroom learning showed positive learning outcomes, which was marked by 86.3% of students being able to achieve the Minimum Completeness Criteria and as many as 85% of students showing positive motivation towards the application of learning. Thus, the research findings indicate that the use of Indonesian language learning based on Flipped Classroom with an online learning framework is able to accelerate understanding. This is driven by independent learning activities carried out by students before learning begins.

This is in line with the results of research conducted by Rediansyah (2021) which states that learning using the Flipped Classroom model through the Google classroom application can increase student activity and learning outcomes. This can be seen from the research findings which obtained results in the first cycle, the class average value of 69.29 with classical learning completeness 72.97% and active student activities. In the second cycle, the average value of the class increased to 88.43 with classical learning completeness reaching 91.89% and student activities were very active.

Another research relevant to this research was also conducted by Sriyani (2021) concluded that the current use of Google classroom is very effective and efficient because it is not limited by space and time. Teachers can provide material online, either in the form of text, images, audio, or video to students. Meanwhile, Atikah et al. (2021) obtained the results that the use of the Google Classroom application in subjects was proven to be effective because it could improve student learning outcomes through planning, processes, results and student learning evaluations. In addition, Maskar and Wulantina (2019) in their students in the learning process using the Blended Learning method through Google Classroom made the learning process interesting, effective, fostering motivation, foster an attitude of independent, active, and creative learning. In addition, this method can also improve students' understanding and learning outcomes.

E-learning media combined with the reverse classroom learning model is more effective in improving student learning outcomes than students only using conventional learning models and media only because they are fixated on the teacher as a source of learning. The use of the Flipped Classroom learning model provides opportunities for students to control their own learning. Students can learn through the accessibility of all the resources needed in an E-learning learning environment. In addition, they (students) have the choice of studying where and when with the time limit allocated to assignments varies, so students can review the material whenever they need it. Students can also get online help from peers or teachers through chats and forums.

## CONCLUSION

The use of the Google classroom platform as an E-learning-based learning medium in the Flipped Classroom learning model has proven to be more effective in improving student learning outcomes in English subjects in SMK. It is said that because the use of E-learning media combined with the Flipped Classroom learning model in this study has a positive influence on student learning outcomes in English subjects at Ibu Kartini vocational school, Semarang City. This is shown through the results of the test results of the difference in the mean of the two groups (control group and experimental group) which obtained a significance value of 0.000 < 0.05 and the N-Gain Score test obtained a result of 68, 81% is included in the quite effective category compared to the N-Gain Score for the control class, namely those using the WhatsApp group media, which is 42.58% included in the less effective category. This means that the hypothesis which states "there is a difference in effectiveness between the Google classroom media in the Flipped Classroom model and other online media (WhatsApp group) to improve student learning outcomes in English subjects" is accepted.

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