

Improving Self Efficacy and Learning Motivation Through Hybrid Learning Based Google Classroom

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ABSTRAK

Pembelajaran online yang berlangsung saat ini menimbulkan permasalahan karena terbatasnya model pembelajaran yang dapat dilakukan secara online, sehingga dapat menurunkan efikasi diri dan motivasi belajar siswa. Pembelajaran dengan bantuan Google Classroom merupakan salah satu solusi yang dapat diterapkan pada kegiatan pembelajaran online guna meningkatkan efikasi diri dan motivasi belajar siswa. Penelitian ini bertujuan untuk menganalisis pengaruh penerapan Google Classroom terhadap peningkatan efikasi diri dan motivasi mahasiswa di Jurusan Teknik Instalasi Tenaga Listrik (TITL). Penelitian ini merupakan penelitian eksperimen semu dengan menggunakan desain pretest-posttest pada kelas kontrol dan kelas eksperimen. Sampel dalam penelitian ini berjumlah 80 mahasiswa dari Jurusan Teknik Instalasi Tenaga Listrik. Metode observasi digunakan untuk mengumpulkan data efikasi diri dan motivasi belajar pada saat pretest dan posttest dengan menggunakan instrumen yang disusun berdasarkan indikator pada variabel dependen. Data yang diperoleh kemudian diuji prasyaratnya dan selanjutnya data dianalisis dengan menggunakan uji paired sample t-test dan independent sample t-test. Hasil analisis data menunjukkan bahwa penggunaan Google Classroom terbukti signifikan dalam meningkatkan efikasi diri dan motivasi belajar mahasiswa dalam kegiatan pembelajaran online bagi mahasiswa Jurusan Teknik Elektro. Kegiatan belajar dengan bantuan Google Classroom secara signifikan lebih unggul daripada kegiatan belajar tanpa bantuan Google Classroom.

ABSTRACT

Online learning that is currently taking place causes problems because of the limited learning models that can be done online, so that it can reduce students' self-efficacy and motivation to learn. Learning with the help of Google Classroom is one solution that can be applied to online learning activities in order to increase self-efficacy and student learning motivation. This study aims to analyses the effect of the application of Google Classroom on increasing self-efficacy and student motivation in the Department of Electrical Power Installation Engineering (TITL). This research is a quasi-experimental study using a pretest-posttest design in the control class and the experimental class. The sample in this study amounted to 80 students from the Department of Electrical Power Installation Engineering. The observation method was used to collect data on self-efficacy and learning motivation during the pretest and posttest by using an instrument that was arranged based on indicators on the dependent variable. The data obtained were then tested for prerequisites and then the data were analyzed using paired sample t-test and independent sample t-test. The results of data analysis showed that the use of Google Classroom proved significant in increasing students' self-efficacy and learning motivation in online learning activities for students of the Electrical Engineering Department. Learning activities with the help of Google Classroom are significantly superior to learning activities without the help of Google Classroom.

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1. INTRODUCTION

The development of science and technology in the 21st century has demanded energy to transform according to the characteristics of that century (Sobandi et al., 2021; Stehle & Peters-Burton, 2019). Having multiple competencies is an absolute thing that must exist in the workforce, so that the competitive aspect is maintained. The ability to think critically, problem solving, creativity is at the heart of carrying out work in the 21st century (Jamaludin & Hung, 2017; Kirsch & Braun, 2020; Sulistyanto et al., 2021). In addition, communication, collaboration and digital literacy are also very much needed as the basis for developing each competency. Thus, it is very important for educational institutions, especially vocational education to develop 21st century skills in students to produce a competent workforce in the 21st century (Calero López & Rodríguez-López, 2020; Mutohhari, Sutiman, et al., 2021). This is considering that these skills still cannot be grown well enough. Various steps have been taken by vocational education in spurring the growth of 21st century skills in students, one of which is by strengthening the mental and psychological aspects of students which can later stimulate them to develop competence (Eegdeman et al., 2018; Virkkula, 2020).

Self-efficacy and learning motivation are very important mental and psychological aspects to pay attention to (Charkhabi et al., 2013; Star et al., 2014; Sun et al., 2015). Self-efficacy plays a role in building students' courage in learning anything, including something new and full of risks. Meanwhile, learning motivation plays an important role in growing students' willingness and enthusiasm for learning new knowledge, so that their curiosity will be high (Li & Zheng, 2017; Yang et al., 2018). Strengthening self-efficacy and good learning motivation can spur students to study harder and more intensively, as is the case in learning to build 21st century skills that are currently very much needed by students (Cairns & Areepattamannil, 2019; Day et al., 2020). Various ways have been taken by vocational education, in order to strengthen self-efficacy and student learning motivation (Conradty & Bogner, 2020; Wilde & Hsu, 2019). Various socialization, training and emotional approaches are carried out to encourage students' self-confidence and courage to study more deeply (Mondi et al., 2021; Wilkinson & Kao, 2019). In addition, various developments of models, media and learning resources are also carried out in order to increase students' learning motivation (Bai, 2020; Ibrahim & Nat, 2019).

However, the basic problem that occurs in vocational education students, as is the case in Indonesia, is the low self-efficacy in learning. Students' courage and self-confidence in their own abilities are still very minimal (Fix et al., 2019; Rachmatullah & Ha, 2019). In addition, the lack of self-efficacy is also supported by student learning motivation which is also not maximized (Bardach et al., 2019; Roos et al., 2021). This was revealed by previous research that obtained information related to a decrease in learning motivation in learning with a teacher-centered learning approach (Virkkula, 2020). In addition, students' courage in trying themselves in learning is still very low. This problem has been exacerbated by the COVID-19 pandemic. The learning process which was originally able to be held in person has been transformed into online learning (Adedoyin & Soykan, 2020; Chung et al., 2020). This makes the level of self-efficacy and student learning motivation increasingly low, especially during practical learning (Lai et al., 2021; Lin, 2021). This problem was confirmed directly in the field based on the results of observations that obtained information that students' self-efficacy and learning motivation were low, especially when the learning process oriented to full student involvement was implemented (Irawaty et al., 2021; Vastyanov et al., 2021). This can also be seen from the attitude of students' independence in learning which is still minimal (Delima & Cahyawati, 2021; Muehlemann et al., 2020). In addition, students revealed that the learning process that was less attractive made students easily bored, so that in the end students lost their motivation to learn (Harahap & Siregar, 2020; Sastradika et al., 2021).

Less interesting learning process that can cause a decrease in the aspects of students' motivation and self-efficacy in learning is strongly influenced by various factors (Bardach et al., 2019; Kärner, 2017; Kärner & Kögler, 2016). One of the crucial factors that influence it is the inappropriate implementation of models, media and online learning resources that can improve these aspects (Forster-Heinzer et al., 2016; Kärner & Kögler, 2016). Teachers tend to still use the same models, media and learning resources as before online learning. This should be an evaluation material to develop appropriate models, media and learning resources according to the characteristics of online learning, considering that the characteristics of online learning are very different from face-to-face learning (Simamora, 2020; Suni Astini, 2020). Thus, a learning model and media are needed that are oriented towards learning efficacy and motivation, so that the estuary can improve student competence in the midst of online learning (Ozer & Akçayoğlu, 2021; Yasin & Ong, 2020).

Hybrid learning is a learning model that can be applied during the COVID-19 pandemic situation. The model is a learning system that combines face-to-face learning and online learning (Nørgård, 2021; Pavlidou et al., 2021). This can certainly reduce the level of student boredom, so that learning motivation can be increased (Aristika & Juandi, 2021; Hariadi et al., 2019). The hybrid learning model gives students the flexibility to explore learning materials online, then practice them offline (Al-Marroof & Al-Emran, 2018;

Ansong-Gyimah, 2020). This of course will also foster student self-efficacy when doing direct practice, considering that students have been given previous opportunities to study and explore the material freely according to the context (Elkordy, 2016; Malmquist & Collins, 2016). However, this model must of course be supported by the right digital media, so that its effectiveness in increasing self-efficacy and student learning motivation can be tested (Gosselin, 2017; Raes et al., 2020).

Google classroom is one of the online-based learning media that is much favored by teachers and students (Al-Marroof & Al-Emran, 2018; Mardiana, 2020). In addition, complete features for uploading and studying such as materials, videos, assessments are available in the online media (Albashtawi & Al Bataineh, 2020; Fürstenau & Hommel, 2019). The complete facilities provided to support online learning play an important role in supporting efforts to implement blended learning (Banat & Martiani, 2020; Chin et al., 2021). Base on previous study state that students can study and explore material in the form of text, videos, images online first (Iftakhar, 2016; Yunus & Syafi'i, 2020). Moreover other researcher state students will practice directly after they understand it, so that self-efficacy and student learning motivation in doing practicum will grow (Ramadhani et al., 2019; Sukmawati & Nensia, 2019). Based on the description above, this study aims to analyses the effectiveness of the hybrid learning model with Google classroom media in increasing self-efficacy and student learning motivation.

2. METHOD

This research is a quasi-experimental research with Pretest-Posttest design (Thyer, 2012). The study used two groups, namely the experimental group and the control group. Students in the experimental group carried out learning activities using Google Classroom while students in the control group carried out conventional learning (without Google Classroom). The first step is to give pretest to both groups to find out the students' initial abilities. After the pretest data has been collected, an equivalence test will be conducted to determine the initial ability equivalence between the two groups. Furthermore, the experimental group was given treatment, namely learning activities using the help of Google Classroom, while the control group carried out conventional learning activities. The last stage is to do a posttest on both groups in order to get the data used for analysis. The sampling technique in this study was random sampling. The sample of this research is the Electrical Power Installation Engineering (TITL) students of SMK N 1 Sedayu as the experimental class, 40 students are taken as the experimental class and the TITL students of SMK N 1 Samigaluh as the control class, totaling 40 students as the control class. This research was conducted in the even semester of the 2020/2021 academic year. The data collection instrument used was a self-efficacy and learning motivation questionnaire which was carried out online. The research instrument used an observation sheet with 4 assessment criteria, namely Strongly Agree (SS), Agree (S), Disagree (TS) and Strongly Disagree (STS). The main points of the statement of self-efficacy and learning motivation on the observation sheet are arranged based on the variables and indicators adopted from the experts. The following is a grid of instruments used to measure self-efficacy and learning motivation shown in Table 1.

Tabel 1. Instrument Grid

Variable	Measurement	Indicator	Item (n)
Self-Efficacy	Observation	Personal experience	4
		Physiological and emotional excitement	3
		Other people's experiences	5
		Social Persuasion	3
		Desire and desire to learn	5
		Have hopes and aspirations for the future	3
		Perseverance in the face of tasks	4
Learning Motivation	Observation	Tenacious in the face of adversity	3
		Can defend opinion	4
		Enjoy working independently	3
		Enjoy finding and solving problems	3

The validity of the instrument is carried out using content validity by asking the opinions of experts and using product moment correlation to measure the validity of the statement. The reliability test was carried out using the Cronbach Alpha formula to determine the level of constancy of the statement. The results of the validation of the expert opinion stated that the pre-test and post-test instruments had high validity. The results of the reliability test obtained a reliability coefficient of 0.912 with very high criteria. Thus, the instrument is declared valid and reliable to be used for data collection.

Data analysis in this study used inferential statistics paired sample t test and independent sample t test. Before carrying out data analysis, the data obtained were tested for analytical prerequisites, namely measuring the normality of the data distribution and the homogeneity of variance. Normality test was performed using non-parametric analysis of One Sample Kolmogorov Smirnov. Homogeneity test can be done if both groups are included in normally distributed data. After fulfilling the prerequisite test, it is continued with hypothesis testing.

3. RESULT AND DISCUSSION

Result

Analysis Prerequisite Test

Prerequisite analysis test was conducted to determine whether the data were normally distributed and had homogeneous variance as a requirement to perform paired sample t-test and independent sample t-test. Prerequisite test consists of data normality test and variance homogeneity test. The analysis prerequisite test was carried out using SPSS V 21 software. The results of the normality test of the data obtained are shown in [Table 2](#).

Table 2. Normality Test Results

Class	df	KS	Sig	Dec.
Pretest Self-efficacy (experiment)	40	0.119	0.155	Normal
Posttest Self-efficacy (experimental)	40	0.118	0.167	Normal
Self-Efficacy Pretest (Control)	40	0.123	0.132	Normal
Posttest Self-efficacy (Control)	40	0.091	0.200	Normal
Learning Motivation Pretest (experiment)	40	0.117	0.181	Normal
Learning Motivation Posttest (experiment)	40	0.108	0.200	Normal
Learning Motivation Pretest (control)	40	0.104	0.200	Normal
Learning Motivation Posttest (control)	40	0.121	0.144	Normal

Based on [Table 2](#), the results of the data normality test using the Kolmogorov Smirnov formula, the significance value in each class is more than 0.050 at a significance level of 5%, so it can be concluded that the data obtained are normally distributed. After knowing that the data is normally distributed, then the homogeneity of variance test is carried out. The results of the homogeneity test are shown in [Table 3](#).

Table 3. Homogeneity Test Results

Variabel	Df1	Df2	Sig	Dec.
Self-Efficacy	1	78	0.634	Homogeneous
Learning Motivation	1	78	0.411	Homogeneous

Based on [Table 3](#), show the results of the homogeneity of variance test, it is known that the significance value for all variables is greater than 0.050 at the 5% significance level, so it can be concluded that the variance of the experimental class posttest data and the control class posttest variable self-efficacy and learning motivation is the same or homogeneous.

Increasing Self-Efficacy Through Hybrid Learning Based Google Classroom

Improving students' self-efficacy in online learning for Basic and Electrical Measurement subjects using Google Classroom through several stages. The first stage is to prepare the learning tools that will be used, prepare the Google Classroom to be used and prepare the efficacy assessment instruments from. The next stage is to conduct a student initial assessment (pre-test) in order to determine the students' initial abilities and the equality of the two groups that will be used for research. Assessment is carried out at the first meeting. The results of the initial ability test and equivalence test are shown in [Table 4](#).

Table 4. Student Self-Efficacy Initial Ability Test Results

Class	df	Mean	t Value	Sig
Experiment Pretest	78	23.00	1.727	0.246
Control Pretest	75.401	23.70		

The results of the student's initial ability test in [Table 4](#) explain that the average self-efficacy of students in the experimental group and the control group is not significantly different. The average pretest

score in the experimental group was 23.00 and the average pretest score in the control group was 23.70. Thus, the results obtained on the equivalence of self-efficacy pretest scores state that data analysis from the posttest from both groups can be carried out. The next stage is the treatment of learning activities with the help of Google Classroom in the experimental class and conventional learning activities in the control class. The process of learning activities used to collect research data was carried out for 6 face-to-face online meetings. The role of the teacher as a facilitator in the learning activities carried out. Google Classroom helps students in the experimental class to study material, do assignments and get feedback from teachers. Meanwhile, students in the control class without the help of Google Classroom carry out conventional learning activities according to the direction of the teacher. After the implementation of learning activities is complete, then a final assessment (posttest) is carried out in the last meeting. The posttest data that had been obtained were then tested using the paired sample t-test and the independent sample t-test. The results of the paired sample t-test can be seen in Table 5.

Table 5. Paired Sample t-Test Results of Self-Efficacy

Paired	Mean	t Values	Sig
Experiment Pretest – Experiment Posttest	-24.400	-42.442	0.000
Control Pretest – Control Posttest	-14.650	-32.092	0.000

Base on Table 5, the significance value of the experimental class pretest and posttest is 0.000 at a significance level of 5%. The significance value obtained is smaller than 0.050, so it can be concluded that there is a significant increase in student self-efficacy in classes that use learning activities with the help of Google Classroom. Various learning strategies can be used by teachers to improve student achievement and also self-efficacy in students (Boahene et al., 2019; Mazzetti et al., 2020). Learning strategies and learning media used for learning activities must be adapted to the needs and interests of students. Learning activities that are supported by the use of technology to help deliver material to students can increase students' self-efficacy (Fitriyana et al., 2020; Sukestiyarno et al., 2021). Online media-assisted learning can increase activity in learning activities. Then after knowing the magnitude of the increase in student self-efficacy, then the data obtained was carried out by an independent sample t-test to determine the difference in the magnitude of the increase in student self-efficacy between the experimental group and the control group. The results of the independent sample t test can be seen in Table 6.

Table 6. Independent Sample t-Test Results of Self-Efficacy

Variable	Mean Difference	t Value	Sig.
Self-Efficacy	7.650	11.283	0.000

Based on Table 6, the significance value in the independent sample t-test that has been carried out on the self-efficacy variable is 0.000 at a significance level of 5%. The significance value obtained is smaller than 0.050, so it can be concluded that there is a significant difference in the average self-efficacy of students in the experimental group and the control group. The difference in the average data obtained on the self-efficacy variable in the experimental group and the control group was 7.650, where the average of the experimental group was higher than the control group. So, it can be concluded that learning with the help of Google Classroom can significantly improve students' self-efficacy when compared to the control group.

Increasing Learning Motivation Through Google Classroom Assisted Learning

Increasing students' learning motivation in online learning using the help of Google Classroom through several stages. The first stage is preparing learning tools to be used, preparing Google Classroom to be used and preparing students' learning motivation assessment instruments. The next stage is to conduct a student initial assessment (pretest) in order to determine the students' initial abilities and the equality of the two groups that will be used for research. Assessment is carried out at the first meeting. The results of the initial ability test and the equivalence test are shown in Table 7.

Table 7. Initial Ability Test Results Student Learning Motivation

Group	df	Mean	t Value	Sig
Experiment Pre-Test	78	42.63	0.999	0.848
Control Pre-Test	77.863	42.03		

The results of the student's initial ability test in [Table 7](#) explain that the average student motivation in the experimental group and the control group has no significant difference in pretest scores. The average student motivation in the pretest of the experimental group was 42.63 and the pretest of the control group was 42.03. Thus, the pretest score of students' learning motivation confirms that the data from the posttest from the experimental group and the control group can be carried out. After the pretest was carried out to test the students' initial abilities, the next step was to provide treatment with Google Classroom-assisted learning and conventional learning for the control class. The process of learning activities used to collect research data was carried out for 6 face-to-face online meetings. The role of the teacher as a facilitator in the learning activities carried out. Google Classroom helps students in the experimental class to study material, do assignments and get feedback from teachers. Meanwhile, students in the control class without the help of Google Classroom carry out conventional learning activities according to online teacher directions. After the implementation of learning activities is complete, then a final assessment (posttest) is carried out in the last meeting. The posttest data that had been obtained were then tested using paired sample t-test and independent sample t-test. The results of the paired sample t test can be seen in [Table 8](#).

Table 8. Results of the Paired Sample t-Test of Learning Motivation

Paired	Mean	t Values	Sig
Eksperimet Pretest – Eksperiment Posttest	-38.550	-55.017	0.000
Control Pretest – Control Posttest	-21.150	-31.065	0.000

Base on [Table 8](#), the significance value of the experimental class pretest and posttest is 0.000 at a significance level of 5%. The significance value is less than 0.050, so it can be concluded that there is a significant increase in student motivation in learning using Google Classroom. In learning activities the teacher has an important role in increasing student motivation with various kinds of activities or learning processes. Learning media and learning methods are things that must be considered to increase student learning motivation ([Ahmad et al., 2019](#); [Selivanova et al., 2018](#)). Student learning motivation affects the quality of learning, the higher the motivation to learn, the higher the quality of learning, and vice versa. High student learning motivation can increase self-confidence, courage, activeness and great curiosity ([Indriwati et al., 2019](#); [Syahrozi et al., 2019](#)). Furthermore, after knowing the magnitude of the increase in students' learning motivation, an independent sample t-test was conducted to determine the difference in the magnitude of the increase in learning motivation that occurred between the experimental group and the control group. The following results from the independent sample t test can be seen in [Table 9](#).

Table 9. Independent Sample t-Test of Learning Motivation

Variable	Mean difference	Nilai t	Sig.
Learning Motivation	9.050	14.464	0.000

Base on [Table 9](#), in the independent sample t test, a significance value of 0.000, this significance value is smaller than 0.050, so it can be concluded that there is a significant difference between the average post-test results for the experimental class and the post-test results for the control class. The average posttest result of the experimental class students' learning motivation was superior with an average difference of 9.050.

Discussion

The effectiveness of blended learning using google classroom provides an indication that students have the courage to learn if they are stimulated through digital-based media that are integrated in mixed learning ([Albashtawi & Al Bataineh, 2020](#); [Yunus & Syafi'i, 2020](#)). Digital-based media is currently very popular with students in supporting the learning process. Through digital media, students can freely explore various learning resources according to their interests ([Masterson, 2020](#); [Nurtanto et al., 2019](#)). In addition, digital media can provide efficiency, flexibility and effectiveness during learning ([Astuti et al., 2021](#); [Mutohhari, Sofyan, et al., 2021](#)). Students can learn anytime and anywhere according to what they are interested in and according to the learning context. The efficiency and effectiveness of digital media can provide students with a comprehensive understanding of the learning material being studied, so that during practice, students will be confident and have the courage to learn.

The growth of students' self-efficacy in learning is influenced by various important factors, especially in vocational education students. An interactive, student-centered learning process is the main key in increasing self-efficacy. Such a learning process is very much needed, especially during online learning in the midst of the COVID-19 pandemic ([El-Adl & Alkharusi, 2020](#); [Wang et al., 2021](#)). Online

learning must be able to maintain full engagement with students as a whole. The ability to maintain the full involvement of students in online learning is also influenced by several factors. The most important factor is the use of learning models supported by appropriate media, so that student activity in learning will be high. This is the estuary that will stimulate students' self-efficacy in learning (la Velle et al., 2020; Sucre-Rosales et al., 2020).

The effectiveness of Google classroom-based blended learning in improving students' self-efficacy is also supported by previous research. Previous research revealed that Google Classroom is an interactive medium that can increase learning activities, so that the estuary will stimulate the mental growth of students' learning. Other studies also reveal the effectiveness of blended learning in improving learning outcomes (Sulisworo et al., 2020; Warman, 2021). The learning process, which starts with understanding the material online, then puts it into practice directly, can affect students' courage and confidence, especially when practicing. The effectiveness of blended learning based on Google Classroom provides an indication that the mixed learning model assisted by digital media is very feasible to be applied to the learning process in the midst of the COVID-19 pandemic (Murtikusuma et al., 2019; Safira et al., 2021).

Then, besides being proven to be able to increase students' self-efficacy, the application of this learning model has also proven its effectiveness in growing students' learning motivation. There are various learning media that can be used to help teaching and learning activities, one of the functions of the media is to increase students' learning motivation. One of the media that can be used to increase learning motivation is Google Classroom (Ghofur & Youhanita, 2020; Saputra & Sujarwanta, 2021). During a pandemic like today, online learning must be done, and Google Classroom with its features can help learning activities and increase motivation to learn even though students are at home (Masharova et al., 2020; Putra, 2021). Google Classroom can assist students in developing students' abilities in the digital field in accordance with the demands of technological and educational developments.

This study is supported by previous research which revealed that learning motivation is strongly influenced by various factors, including determinant factors, namely the attractiveness and instructiveness of learning. The research concludes that interesting and interactive learning will make students motivated to learn (Murtiyasa & Al Karomah, 2020; Putra, 2021). Other studies also emphasize that learning in the midst of the COVID-19 pandemic will be more effective when using the blended learning model. Students are given the freedom to explore online learning materials and resources, then continue to practice in person (Warman, 2021). This is what then resulted in the conclusion that the blended learning model that was integrated with the Google Classroom media was effective in increasing students' learning motivation. Thus, it is very important for vocational education to apply these models and media in order to support increasing student learning motivation during the COVID-19 pandemic (Batubara et al., 2021; Haryanto et al., 2021).

Implication of this study sound that learning activities with the help of Google Classroom significantly excel in increasing students' self-efficacy during online learning activities. Google Classroom also increases students' learning motivation significantly towards classes that implement learning activities with the help of Google Classroom. Learning activities with the help of Google Classroom significantly excel in increasing students' learning motivation during online learning activities. Thus, the ongoing learning activities, especially for the Electrical Power Installation Engineering major, are very important to improve student self-efficacy and student motivation, especially online learning activities using Google Classroom-assisted learning activities that have been proven to be effective. This research still has many shortcomings, therefore it is hoped that the next research can be able to deepen the discussion of this research related to improving self efficacy and learning motivation.

4. CONCLUSION

One of the problems that occurred during the pandemic in the Electrical Power Installation Engineering department was students who had low learning achievement, self-efficacy and learning motivation. One of the things that can be done to overcome these problems is to implement learning activities with the help of Google Classroom. The implementation of learning activities assisted by Google Classroom is expected to help teachers and students in providing materials, giving assignments, virtual learning activities and other features. The results of the study concluded that there was a significant increase in student self-efficacy in classes that implemented learning activities with the help of Google Classroom for students majoring in Electrical Installation Engineering.

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