The Effect of Blended Learning on Student Learning Outcomes in Software Application Subjects and Building Interior Design at SMK Negeri 2 Surabaya

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Abstract: Covid-19 is a virus that has caused a pandemic throughout the world including Indonesia since 2020. This has hampered all aspects of life, one of which is the education aspect. By the end of 2020, many schools in Indonesia were implementing mixed learning-based learning between online, offline, and independent learning, or what could be called blended learning. To see whether or not there is an effect of blended learning-based learning on student learning outcomes in the subjects of Software Applications and Building Interior Design, this research was conducted. Class XI DPIB SMK Negeri 2 Surabaya students were the sample in this study. Ex post facto is the method used by researchers in compiling this research. In this study, a questionnaire was used as a data collection technique. There are 36 students as respondents. The time of the research was carried out in the 2021/2022 academic year. Data analysis used linear regression. The results of the study are as follows. (1) The results of the questionnaire analysis on the implementation of blended learning at SMK Negeri 2 Surabaya got an average of 3.21 with a sufficient/normal category. (2) There is an increase in student learning outcomes from semester 1 to semester 2. (3) There is a positive effect of blended learning on learning outcomes.

Keywords: Blended Learning; Learning Outcomes; Software Application

Abstrak: Covid-19 menyebabkan berbagai permasalahan bagi dunia termasuk di Indonesia. Semua aspek kehidupan terdampak, khususnya aspek pendidikan. Pada akhir tahun 2020 banyak sekolah di Indonesia menerapkan pembelajaran campuran antara pembelajaran daring, luring, serta pembelajaran mandiri atau bisa disebut *blended learning*. Untuk melihat apakah ada atau tidak pengaruh pembelajaran berbasis *blended learning* terhadap hasil belajar siswa pada mata pelajaran Aplikasi Perangkat Lunak dan Perancangan Interior Gedung maka dilakukanlah penelitian ini. Murid kelas XI DPIB SMK Negeri 2 Surabaya menjadi sampel pada penelitian ini. *Ex post facto* merupakan metode yang digunakan peneliti dalam menyusun penelitian ini. Pada penelitian ini digunakan angket sebagai teknik pengambilan data. Terdapat 36 siswa sebagai responden. Waktu penelitian dilakukan pada tahun pelajaran 2021/2022. Analisis data menggunakan regresi linier. Hasil penelitian sebagai berikut. (1) Hasil analisis kuesioner pada pelaksanaan pembelajaran *blended learning* di SMK Negeri 2 Surabaya mendapatkan rata-rata 3.21 dengan kategori cukup/normal. (2) Adanya kenaikan hasil belajar siswa dari semester 1 ke semester 2. (3) Pembelajaran *blended learning* berpengaruh positif terhadap hasil belajar.
Kata kunci: *Blended Learning*; Hasil Belajar; Aplikasi Perangkat Lunak

INTRODUCTION

Education is an effort to realize learning so that humans can build potential or talents and interests in themselves which will later be useful for their future and useful for the nation and state. National education has an important role in shaping students into quality individuals and ready to become individuals who can be democratic and responsible in social life. Developing students' talents to become creative, capable, knowledgeable, independent human beings, and also to become citizens of a leader-spirited and responsible citizen is the purpose of the establishment of national education and is stated in Permendikbud Number 54 of 2013 (Kholifah, 2016).

Many sides or aspects result from technological advances in this century. Especially in the education system in Indonesia. Learning today is no longer using conventional methods but using technology-based learning media. Besides making it easier for teachers in the teaching and learning process, it also makes it easier for students to find sources of knowledge on social media. Learning models have developed into many kinds that can be used by teachers in improving the quality of learning. However, because many teachers do not understand the latest technology, it has an impact on the use of learning models that are only limited to lectures or conventional ones. The disadvantage of lecture learning is that students only listen to the teacher when explaining the learning material and seem passive when learning. In addition, the level of student boredom will occur more quickly. When students are getting bored, then the explanation of the material from the teacher will be difficult for students to accept. The role of the teacher is to create learning that does not bore students and attracts students' interest to learn the material being taught. This can be done by making learning interactive and not forgetting to stay conducive.

The year 2020 is a year where all aspects of life experience a downturn. This is due to the emergence of the Covid pandemic which is a deadly epidemic. Education is one of the worst aspects of this pandemic (Sa'diyah, 2021). The government closed schools and prohibited teaching and learning activities at school or face-to-face while the COVID-19 pandemic still existed (I Gusti, 2020). This is to prevent the spread of the COVID-19 virus in the school environment. It is made worse by the number of deaths caused by this pandemic which is increasing day by day.

Education during the pandemic has undergone many major changes. One of them is the change in the learning model which was originally face-to-face to online or independent learning, making teachers required to use several applications to support online or independent learning activities. However, online learning does not fully run smoothly as expected. Many obstacles and adaptations were made by teachers and students. This has an impact on the process of delivering learning materials to students (Santosa, 2021). In the current learning process, students and teachers are required to adapt to online learning, while some practical subjects should be done offline. It's no longer a matter of delivering material, but being constrained by the tools or equipment to practice. This can have an impact on decreasing student learning outcomes. Some schools make an effort after there is a relaxation of regulations from the government, namely by conducting hybrid or blended learning. The implementation of hybrid learning or blended learning is not without reason but to minimize the gathering of many people in school at one time. This is also done to prevent the spread of the virus.

One of them is in the subject of Software Applications and Building Interior Design which is one of the mandatory subjects in Vocational High Schools (SMK) in the field of building modeling and information design expertise (DPIB). This course provides students with skills and knowledge in drawing building designs using software. The results of observations during internships at SMK Negeri 2 Surabaya found that students had difficulties in learning because not all students had computers or laptops at home so that learning outcomes could not be maximized. So there is a need for learning that can be a mediator or solution for online learning, one of which is blended learning.

Blended learning is learning that mixes offline, online, and independent learning activities (Widiari, 2018). Combining traditional or face-to-face learning with technology-based learning. Current technological advances make learning models develop very quickly. Another opinion was expressed (Agus Purnomo, Nurul Ratnawati, 2016), that blended learning is a mixture of offline learning activities with online learning (using internet facilities or media). Blended learning does not replace offline activities completely online (online), it only complements the material that is lacking when learning offline (Priono & Komaro, 2018). It aims to reduce the number of students who attend offline and are replaced by online. This allows students to experience face-to-face learning again after a long period of online teaching and learning activities. Based on the understanding of blended learning from experts, the definition obtained is mixing or combining

offline or offline learning with online learning activities or independently at home by utilizing technology to achieve the goals of learning (Kiranawati, 2015).

Figure 1. Blended Learning Scheme

According to M. Carman (2005) which is contained in the Blended Learning Model book, the requirements for carrying out learning activities have five important points, namely as follows: (1) Live event or face-to-face learning is learning that is still the main learning used by educators. Face-to-face learning or often called traditional learning utilizes meetings between educators and students directly at school. In this learning, educators often use the lecture method, question and answer, and discussion. (2) Self-paced learning or independent learning, namely online-based learning that allows students to learn anytime and anywhere. The media used can use video, simulation, animation, images, and audio. In addition, it can be packaged in a book, web, or online journal. (3) Collaboration or collaboration is learning that combines communication tools such as chatrooms, emails, and discussions with conventional learning. It's easier than online meetings, you can use applications that provide online meeting features. (4) Assessment or assessment is an important step in learning. The assessment is carried out to determine the ability or mastery of the students' material. Assessments that combine online and offline assessments, as well as test and non-test, are requirements that must be met in the implementation of learning. (5) Performance Support Materials or supporting learning materials, are an important component as a helper for learning activities. To assist students in using learning media when conducting online or offline learning activities, it is better to summarize in digital and print forms. These five important points are expected to be able to create appropriate learning objectives.

The conclusions obtained from the description above are, that blended learning is a combination of learning methods between online and offline learning and student independence in technology-based learning. Indicators to measure the implementation of blended learning are: (1) The implementation of learning which is divided into two, namely offline or offline learning and online or online learning. (2) Independent learning, namely online or online learning that students can do anytime and anywhere. The media used can be videos, simulations, animations, images, and audio and can also be made such as books, web, or online journals. (3) Teaching materials or materials that support students in learning offline or online. (4) Assessment, to see the development and understanding of students in the ongoing learning, it is necessary to have a test or assessment. Assessment can be from student activity, written or non-written tests, or assignments.

Learning outcomes are a reference used by teachers in knowing the strengths and weaknesses of students in a lesson (Santosa, 2021). As well as a reference to the effectiveness of the teaching and learning process carried out, which will later be useful for revising or improving teaching materials and also perfecting learning activities for students to become even better. Learning outcomes are a manifestation of a learning process that affects three domains of education in students (Miski, 2015). In learning, to find out how well students understand mastering the material, an assessment of learning outcomes can be used. This can be done by asking questions during the lesson, by giving written or non-written tests, or by looking at student activities during learning.

There are two factors that can have an impact on student learning outcomes, namely, internal and external. The influence that occurs as a result of the individual itself is included in internal factors, while external factors or influences from outside the individual itself. Internal factors

include physical and spiritual fatigue factors, health factors, and psychological factors (such as student maturity and readiness as well as interests and talents). External factors occur due to several things including family factors (household atmosphere, parental ways of teaching, parental attention, and relationships between family members), school factors (teaching ways of teachers at school, relationships between students, relationships between teachers and students, circumstances building, as well as homework or homework), and community factors (friends hanging out, activities in society). These factors greatly affect the learning outcomes of students (Saputra et al., 2018).

The explanation above shows that the benchmark used by the teacher in knowing the progress of students and understanding the learning that has been carried out is a definition of learning outcomes and a tool to find out the strengths and weaknesses of students in a lesson. Indicators to measure learning outcomes are written and non-written assessments.

Software Applications and Building Interior Design is a study that explores an application that is useful for designing and processing building drawings. Students are expected to be able to master applications or software to prepare them for the Field Work Practice period and prepare them to enter the world of work. During this pandemic, students are experiencing any problems while participating in this lesson. Students have difficulty adapting to learning that was initially offline into a hybrid, especially in subjects that have practice. In 2015 a study was conducted by Ike Kiranawati which discussed the effect of using blended learning on student learning outcomes in accounting subjects and in 2018 a similar study was conducted by Agus et al. In both studies, it was found that the X variable affected the Y variable.

Based on the background explanation above, this research also focuses on the effect of Blended Learning on the learning outcomes of class XI DPIB students in the subjects of Software Applications and Building Interior Design at SMK Negeri 2 Surabaya. While the difference from previous research is in the subjects and current conditions that are being hit by a pandemic.

This research has the following problem formulations: (1) How is the implementation of blended learning in Software Applications and Building Interior Design subjects? (2) How are student learning outcomes in the subjects of Software Applications and Building Interior Design? (3) What is the effect of blended learning on student learning outcomes in the subjects of Software Applications and Building Interior Design at SMK Negeri 2 Surabaya?

This research has the following objectives: (1) Knowing the implementation of blended learning in the subjects of Software Applications and Building Interior Design. (2) Knowing student learning outcomes in the subjects of Software Applications and Building Interior Design. (3) Knowing the effect of blended learning on student learning outcomes in the subjects of Software Applications and Building Interior Design. The benefits that are expected after this research is carried out are: (1) Students are expected to be able to maximize teaching and learning activities both online and offline. (2) For teachers to make it easier to make learning more attractive to students both offline and online.

METHODS

The research method is the core structure of a study. A method is needed in completing the research. The method used is also adapted to the themes and problems taken in a study (Sugiyono, 2017). The researcher chose the quantitative method as the research method and used an ex post facto approach. This method itself is a method used to find the relationship between one thing and another (cause and effect) that occurs in the field and is not given treatment by the researcher (Ramadhan et al., 2017). Ex post facto is a method commonly used for research related to education. It begins by describing the circumstances that are suspected to be the result of the previous factors, and after that conducting a backward investigation to determine the cause of the existing problems (Ramadhan et al., 2017).

A total of 36 11th-grade students of DPIB SMK Negeri 2 Surabaya became respondents in this study. In the even semester of the 2021/2022 academic year this research was carried out using an online class. The research instrument used as a means of collecting data is a questionnaire that contains experiences when carrying out blended learning in the subjects of Software Applications and Building Interior Design. To find out student learning outcomes, the examination scores in related subjects are taken which are then calculated as the average student scores.

The purposive sampling technique was chosen by the researcher in collecting data in the field. This data collection technique takes into account the criteria needed when conducting research. This data collection must be selective or by the research to be carried out. After collecting data in the field, later the data will be processed or analyzed using descriptive analysis and simple linear regression analysis. Before entering the simple linear regression analysis stage, the research data must pass the classical assumption test or the data feasibility test before entering the regression analysis.

RESULT AND DISCUSSION

This research was conducted to see whether or not there is an influence of the blended learning process on student learning outcomes in the subjects of Software Applications and Building Interior Design. The data taken is data on the implementation of blended learning and student learning outcomes packaged in a questionnaire. The questionnaire contains 17 statement items that are given an answer which is chosen according to the conditions experienced by the students. Questionnaires were distributed to 36 respondents, all of whom were students of XI DPIB SMK Negeri 2 Surabaya. The blended learning questionnaire contains four indicators, namely: (1) implementation of blended learning, (2) independence in learning, (3) teaching materials or materials, and (4) assessment.

This research produced data that is processed through SPSS 16.0. The data on the results of the questionnaire on the implementation of learning using the blended learning method is in Table 1.

Table 1.Implementation of Blended Learning

Instrument	No	N	Min	Maks	Mean	Std. Dev
1	1	36	2	5	4.14	1.018
	2	36	2	5	4.22	1.098
	3	36	3	5	4.50	.697
	4	36	1	5	2.61	1.022
	5	36	1	5	2.44	1.027
	6	36	1	5	2.42	1.105
2	7	36	1	4	2.44	.969
	8	36	1	4	2.14	.798
3	9	36	3	4	3.56	.504
	10	36	3	5	3.72	.701
	11	36	2	5	3.86	.798
	12	36	1	5	3.22	.637
	13	36	2	5	3.56	.998
4	14	36	1	5	2.86	.899
	15	36	1	5	2.92	.967
	16	36	2	5	3.14	.931
	17	36	2	5	2.86	1.018
Mean					3.21	

The results of the blended learning questionnaire can then be categorized using a range of values. The interval of the questionnaire value range is obtained from the following calculations:

$$I = \frac{Highest\ answer\ -lowest\ answer}{Alternative\ number\ answer}$$

Description :
I = Interval
After calculating the value range interval, the results are shown in Table 2.
Table 2. Range of Questionnaire *Blended Learning*

Interval Lenght	Criteria
1 – 1.8	Very Less
1.81 – 2.61	Less
2.63 – 3.42	Neutral
3.43 – 4.23	Good
4.24 - 5	Very Good

From Table 1, the descriptive analysis obtained from the questionnaire on blended learning is that, of the 6 statements in the first instrument, the lowest average is item number 6 with a value of 2.42. point number 6 contains online learning methods that are very interesting and innovative. In the 2 statement items in the second instrument, the lowest average is number 8 with a mean of 2.14 which contains the understanding of the material during independent learning carried out by students outside of school. Of the 5 statements on the third instrument, the lowest average is at point 12 which contains statements about students learning the material given during learning activities. In the fourth instrument, the lowest value is in items 13 and 17 which have an average value of 2.86. From the calculations, the average number of questionnaires for the implementation of blended learning is 3.21. This value when referring to the rating scale is included in the sufficient/neutral category.

Based on the results of the analysis of student learning outcomes carried out, it can be seen through Table 3.
Table 3. Learning Outcomes

Semester	N	Sum	Max	Min	Std. Dev	Mean
Smt 1	36	2796	84	68	3.74929	77.6667
Smt 2	36	2813	88	68	4.49223	78.1389
N	36					

After analyzing the data on student learning outcomes during odd and even semesters, the lowest score in odd semesters is 68. If the Minimum Completeness Criteria (KKM) is less than 75 then in odd semesters there are 3 students who do not pass the KKM. The highest score obtained by students in odd semesters is 84 and the total number of students' scores in odd semesters is 2796 and if averaged, the average value of odd semester students is 77.6667. There was a slight increase in the even semesters compared to the odd semesters. The increase was in the highest student score of 84, the total number of students' scores was 2813 and the average value of students was 78,1389.

In data processing, researchers used a simple linear regression analysis method. This analysis technique is an analytical technique used to measure the size of the influence of the X (independent) variable on the Y (dependent) variable (Kurniawan & Yuniarto, 2016). In the process of processing the data using regression analysis, the researcher must ensure that the data taken has passed the pre-requisite test for the feasibility of simple linear regression analysis. Prerequisite tests carried out include: (1) Normality Test, used to check the data taken including normal or abnormal distribution. (2) Linearity test, is a test in which both variables are corrected whether they choose a linear relationship or not. If these variables have a linear relationship, then you can proceed to the next stage. (3) Heteroscedasticity test, conducted to determine whether

there is a difference in variation from the residual value of one observation to another. After carrying out the three prerequisite tests and being declared to have passed the test, the research data is ready to be processed using simple linear regression analysis (Darma, 2021). In measuring the influence of variable X on variable Y, a simple regression test is needed. In this data processing, researchers used IBM SPSS software to assist in processing the data obtained.

The normality test is a prerequisite test used in data analysis. If examined from the basic word "normal", then the normality test is a test of research data to check the data taken including normal or abnormal distribution. To perform this test, several methods can be used, including the Kolmogorov Smirnov test, the graph test, the chi-square test, Shapiro Wilk, and Lilliefors. In this study, the researcher used Kolmogorov Smirnov with the following conditions: (1) If the result of significance (Sig.) > 0.05, the research data was normally distributed. (2) If the result of significance (Sig.) < 0.005, the research data is not normally distributed. After analyzing the data taken, the results of the normality test are shown in Table 4.

Table 4. Normality Test

		Unstandardized Residual
N		36
Normal Parameters[a]	Mean	.0000000
	Std. Dev	3.55742887
Most Extreme Differences	Absolute	.135
	Positive	.135
	Negative	-.096
Kolmogorov-Smirnov Z		.807
Asymp. Sig. (2-tailed)		.532

In the calculations performed, the obtained value (sig.) with a magnitude of $0.532 > 0.05$. Based on the existing provisions, the conclusion obtained is that the data taken is normally distributed. With these results, the requirements for the normality test as a requirement in a simple regression have been met and further testing can be carried out.

A linearity test is a test carried out to meet the requirements of simple linear regression data analysis. A linearity test is a test that is intended to find out the X variable or independent variable with the Y variable or the dependent variable has a linear attachment or not. The linear test in this study was conducted to determine whether there was a significant linear relationship between blended learning and learning outcomes. After analyzing the data taken, the results of the linearity test are obtained in Table 5.

Table 5. Linearity Test

Learning Outcomes * Blended Learning		Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)	305.014	9	33.890	3.384	.007
	Linearity	122.474	1	122.474	12.229	.002
	Deviation from Linearity	182.540	8	22.817	2.278	.054
Within Groups		260.396	26	10.015		
Total		565.410	35			

In the linearity test, the decision to pass or not the data can be done by comparison: (1) If the value (Sig.) > 0.05 means that there is a linear relationship between blended learning and learning outcomes. (2) If the value (Sig.) < 0.05 means that there is no linear relationship between blended learning and learning outcomes. The results of the linearity test calculations were carried out, resulting in the data contained in table 5. The results were obtained with (sig.) 0.054. According to the provisions, the magnitude of the significance of 0.054 is greater than 0.05. So the conclusion obtained is that there is a linear relationship between blended learning and learning outcomes.

A heteroscedasticity test is a test carried out to determine the presence or absence of heteroscedasticity symptoms in the data. Before performing a simple regression analysis, the previous data should not be heteroscedasticity. In the heteroscedasticity test, several ways can be used, but in this study, the researchers used the Glejser test. As for the determination of test decisions: (1) If the results of significance (Sig.) > 0.05, it means that there are no symptoms of heteroscedasticity in the research data. (2) If the result of significance (Sig.) < 0.05, it means that there are symptoms of heteroscedasticity in the research data. After analyzing the data taken, the results of the heteroscedasticity test are shown in Table 6.

Tabel 6. Heteroscedasticity Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.458	2.914		1.187	.244
	Blended Learning	-.015	.053	-.050	-.289	.774

According to the results of the analysis above, the results obtained a significance of 0.774 which means the value is greater than 0.05. So it can mean that there are no symptoms of heteroscedasticity in the research data.

After testing the data prerequisites or the classical assumption test, then the next step is to test the research data using simple linear regression analysis. This analysis is an analysis that is useful for measuring the magnitude of the influence on the X variable or the independent variable on the Y variable or the dependent variable. The hypotheses tested in this analysis are:

H_0 :   There is no effect of blended learning on student learning outcomes in the subjects of Software Applications and Building Interior Design at SMK Negeri 2 Surabaya.

H_a :   There is an effect of blended learning on student learning outcomes in the subjects of Software Applications and Building Interior Design at SMK Negeri 2 Surabaya.

On the basis of decision making:
H_0 is rejected if the significance value (Sig.) < 0.05
H_0 is accepted if the significance value (Sig.) > 0.05
The results obtained after conducting the analysis are shown in Table 7.

Table 7. Simple Linear Regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	64.556	4.394		14.691	.000
	Blended Learning	.244	.080	.465	3.066	.004

In general, each of these regression analyzes in order to determine whether there is an influence between the two variables or not, use the equation below:

$$Y = a + bX$$

Description :

a = constant number of unstandardized coefficients, we get 64,556. Has a meaning if there is no blended learning (X), then the value of learning outcomes (Y) is 64,556

b = the regression coefficient, the value obtained is 0.244. It means that every 1% addition of blended learning level (X), means that learning outcomes (Y) will increase by 0.244

Based on the results of the analysis, the regression coefficient is positive (+), it can be concluded that blended learning (X) has a positive influence on learning outcomes (Y) with the formula Y = 64,556 + 0.244X.

Making decisions in this analysis can be done in two ways, namely the first to compare the results (Sig.) with the probability and the second by comparing the T count and T table. In the calculations performed, the results obtained a significance of 0.004. Based on the decision-making guidelines, the significance value (Sig.) of 0.004 is not greater than the probability value of 0.05, which means that it can be concluded that H0 is rejected and Ha is accepted. Ha means that there is an effect of blended learning (X) on learning outcomes (Y). After that, the determination of the magnitude of the influence can be seen in the R Square table. The results of data processing from the IBM SPSS 16.0 software obtained an R square of 0.217 which can be seen in Table 8.

Table 8. Nilai R Square

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.465[a]	.217	.194	3.60936

The amount of R square means that the effect of blended learning (X) on learning outcomes (Y) is 21.7% and while 78.3% of learning outcomes are influenced by other variables not examined.

Blended learning has a positive effect on student learning outcomes, but only 21.7%, meaning that there are other variables that have a greater influence on learning outcomes. Blended learning must also pay attention to the teacher who teaches and the students who are taught.

The results of this study are in line with the research of Kiranawati (2015) and Agus et al (2018) which state that there is an effect of blended learning on student learning outcomes in a positive direction, this can be evidenced by an increase in student learning outcomes after using blended learning in Application Software subjects and Building Interior Design.

Blended learning can be applied to complement online learning, because not all materials can be delivered online, there must be offline learning. Blended learning can be a solution and link for online and offline learning. Blended learning can also be a combination of online and offline learning, for example, the introductory material uses online, then the practice uses offline.

CONCLUSION AND SUGGESTIONS

This study obtained several conclusions, namely as follows: 1) the implementation of blended learning at SMK Negeri 2 Surabaya is sufficient/neutral. This is based on the average acquisition of the questionnaire results with a value of 3.21. Obtaining sufficient/neutral results is caused by the implementation of independent learning which is less attractive to students. This can be seen in the questionnaire items 7 and 8 which get an average result below 3 which indicates it is less attractive to students; 2) there is an increase in student learning outcomes from semester 1 to semester 2. This is evidenced by the increase in the average score of students from an average value of 77.6667 to 78.1389 which is above the KKM; and 3) the use of blended learning in Software Applications and Building Interior Design subjects influences student learning outcomes at SMK Negeri 2 Surabaya. This is evidenced by simple regression analysis with a significance result of 0.004, which means that (Sig.) <0.05, which means that there is an effect of

blended learning on student learning outcomes. Blended learning has a positive influence on student learning outcomes. This is evidenced by the value of the regression coefficient (+) which means that the X variable or blended learning has a positive influence on the Y variable or learning outcomes. The effect of blended learning on learning outcomes is 21.7% as evidenced by the results of the calculation of R square on the IBM SPSS 16.0 software with a result of 0.217 which means 21.7%, then the other 78.3% is influenced by other variables not examined.

REFERENCES

Agus Purnomo, Nurul Ratnawati, N. F. A. (2016). Pengembangan Pembelajaran Blended Learning Pada Generasi Z. *Jurnal Teori Dan Praksis Pembelajaran IPS*, *1*.

Darma, B. (2021). *Statistika Penelitian Menggunakan SPSS*. Jakarta: Guepedia.

I Gusti. (2020). Dramatik Pembelajaran Daring Pada Masa Pandemi Covid-19 (Studi Pada Persepsi Mahasiswa PGSD Undiksha). *Mimbar PGSD Undiksha*, *8*(3), 515–526.

Kholifah, S. N. (2016). Pengaruh Model Pembelajaran Blended Learning Terhadap Hasil Belajar dan Motivasi Belajar Siswa Kelas XI TEI pada Mata Pelajaran Komunikasi Data dan Interface di SMK Negeri 1 Jetis Mojokerto. *Jurnal Pendidikan Teknik Elektro*, *5*, 975–982.

Kiranawati, I. (2015). Pengaruh Penerapan Model Blended Learning Terhadap Hasil Belajar Siswa Pada Mata Pelajaran Akuntasi. *Jurnal Pendidikan Akuntansi Dan Keuangan*, 1–13.

Kurniawan, R., & Yuniarto, B. (2016). *Analisis Regresi : Dasar dan Penerapannya dengan R*. Jakarta: Kencana.

Miski, R. D. B. (2015). Pengaruh Sarana dan Prasarana terhadap Hasil Belajar Siswa. *Jurnal Ta'dibi*, *4*(2), 17–21.

Priono, A. I., & Komaro, M. (2018). Pengaruh penerapan model pembelajaran blended learning terhadap hasil belajar menggambar 2 dimensi menggunakan computer aided design. *Journal of Mechanical Engineering Education*, *5*(2), 129–140.

Ramadhan, S., Tressyalina, & Zuve, F. O. (2017). *Buku Ajar Buku Ajar Metode Penelitian Pembelajaran Bahasa Indonesia*. Sukabina Press.

Sa'diyah, N. P. (2021). Pengaruh Pembelajaran Daring Terhadap Hasil Belajar Pada Masa Pandemi Covid-19. *Jurnal Ilmiah MEA*, *5*(2), 552–563.

Santosa, T. A. (2021). Efektivitas Model Blended Learning Terhadap Hasil Belajar Mahasiswa Pada Mata Kuliah Zoologi di Era Covid-19. *Jurnal Ilmiah Pendidikan Biologi*, *7*, 77–83.

Saputra, H. D., Ismet, F., & Andrizal. (2018). Pengaruh Motivasi Terhadap Hasil Belajar Siswa SMK. *Jurnal Inovasi Vokasional Dan Teknologi*, *18*(1), 25–30.

Sugiyono. (2017). *Metodologi Penelitian Kuantitatif, Kualitatif dan R&D*. Alfabeta.

Widiari, I. K. (2018). Blended Learning Sebagai Alternatif Pembelajaran Di Era Digital. *Jurnal Purwadinata*, *2*(2).