



# Blended Learning Model in Application of Limited Face to Face Learning: Its Influence on Student Learning Outcomes

Rizki Ramadani<sup>(✉)</sup> and Apri Nuryanto

Yogyakarta State University, Yogyakarta, Indonesia

rizkiraramani.2020@student.uny.ac.id, apri\_nuryanto@uny.ac.id

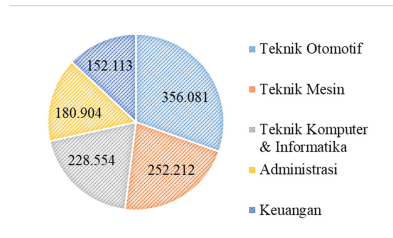
**Abstract.** The application of limited face-to-face learning (LFFL) is a policy that has been set by the government in the world of education to cope with the spread of the corona virus which until now This cannot be permanently eliminated, the application of LFFL must also be accompanied by the selection of the right learning method so that it can be applied in the LFFL period, one of which is *blended learning*. Then this study aims to determine whether the application of the *blended learning* in LFFL has an effect on the learning outcomes of SMK students throughout Sleman. Quantitative research methods and correlational approaches are used to analyze the data in this study. A total of 2209 students from all SMKs in Sleman Regency became the population, but only used 339 students as respondents, based on the results of calculations using the *Slovin approach*. Data collection in this study used tests, and questionnaires assisted by *google* instrument prerequisite test form in this study used normality, linearity, and multicollinearity tests. Meanwhile, to test the hypothesis using a simple regression test. The results showed a value (sig.  $0.000 < 0.05$ ). So it can be concluded that there is a positive and significant influence between *blended learning* which is applied in the LFFL period to student learning outcomes at SMK throughout Sleman Regency.

**Keywords:** blended learning · LFFL · learning outcomes

## 1 Introduction

*Coronavirus disease* 2019 has hit the world for almost two years, all countries in the world are feeling the impact of covid-19, almost all sectors are experiencing its effects, one of which is the education sector. The results of a study conducted by [1] found that almost 60% of students in Bangladesh experienced extreme academic delays and suffered from severe stress. While in Indonesia itself, the education sector has experienced the effects of Covid-19, namely the learning process can only be done online, as a result, according to the results of observations, student learning outcomes have decreased, this is reinforced by the results of an evaluation conducted by [2] stated that there was a decreased learning outcomes due to online learning.

The decline in learning outcomes is experienced at almost all levels of education in Indonesia starting from elementary, junior high, to vocational/high school, especially at



**Fig. 1.** The largest unemployed vocational majors.

the vocational level education if it refers to the objectives of the SMK which is regulated in the [3] concerning The Content Standards for Elementary and Secondary Education Units state that every SMK graduate must have behavior that reflects an attitude of faith, confidence, character, honesty, responsibility, can think logically, innovatively, critically, creatively and be able to master competencies well in order to be able to compete in the world of work as well as higher education for those who continue.

Judging from the goal of SMK that can graduate students who are able to compete in the world of work, SMK graduates should be able to be absorbed by industry and reduce unemployment in Indonesia, but in fact according to the Central Statistics Agency (BPS) [4] stated that SMK graduates still dominate the number of unemployed in Indonesia, seen in detail, the February 2021 open unemployment rate (TPT) was 139.81 million people, an increase of 1.59 million people compared to August 2020. More specifically, the automotive department is in the first level as a contributor to unemployment for vocational school graduates as evidenced by data released by BPS in [5] can be seen in Fig. 1.

The high number of unemployed SMK graduates is further exacerbated by the learning process in the Covid-19 era, where online learning gives students little experience in practical learning resulting in low skills of SMK graduates, this is reinforced by the results of research conducted by [6] as a result of online learning, the skills that should be acquired must be lost due to the absence of practical learning. Reinforced by the results of research conducted by [7] states that practical learning affects students' skills.

Overcoming several learning obstacles caused by online learning, the Indonesian government issued a policy, along with the large number of teachers and students who had vaccinated, and the decrease in the number of transmissions of Covid-19 cases, LFFL or limited face-to-face learning was introduced. The implementation of face-to-face learning is limited in each school, it is possible to vary but the direction from the ministry of education and culture can be used as alternative learning such as using *blended learning*.

Based on the definition according to [7] *Blended learning* is a combination or amalgamation of various aspects including web-based learning, video streaming, audio, and communication with traditional learning systems and includes methods, learning theories, and pedagogic dimensions. Based on this opinion, it can be stated that *blended learning* is learning that combines several activities, methods, media or others, for example combining online and face-to-face learning directly, all Sleman districts are starting to implement *blended learning*. The results of observations in several vocational schools

in Sleman the implementation of *blended learning learning* carried out by combining online learning and offline learning, online learning is used to provide learning materials with the hope that students can access the material anywhere and anytime, while online learning is used to carry out practical learning, or learning that is difficult to learn independently.

However, *blended learning*, the percentage of face-to-face or offline is very limited from the results of offline learning observations carried out only 90 min to 120 min per two weeks for basic automotive engineering subjects, this allows learning outcomes to not be achieved optimally, reinforced by research results [8] mention that the application of *blended learning* has problems after being implemented for some time, namely: boredom experienced by 39 students in online learning, student boredom has an impact on students' lack of interest in learning, so that it affects student learning outcomes. Based on the explanation above, it is necessary to conduct research in SMK Sleman Regency as long as *blended learning* in the LFFL period, whether it can affect student learning outcomes.

## 2 Method

### 2.1 Types of Research

This type of research uses *ex-post facto* with a correlational approach, the aim is to find the causes that allow changes in behavior or phenomena caused by an event.

### 2.2 Place and Time of Research

This research was conducted at SMK throughout Sleman which includes 26 schools that have automotive engineering study programs, this research was conducted for 6 months starting from field observations to the preparation of research reports. Starting from July 2021 to December 2021.

### 2.3 Population and Research Sample

The population in this study were all students of SMK majoring in automotive engineering class X in Sleman Regency, the total number of the population in this study was 2209 spread over 26 schools. Furthermore, samples were taken using *proportionate random sampling technique* and to measure the number of samples used in this study used the approach developed by *Slovin* with an error rate of 10% so that 339 respondents were obtained as samples.

### 2.4 Research

Variables The variables used in this study use a dual paradigm consisting of *independent* (free) variables including *blended learning variables*, while the *dependent* (bound) is student learning outcomes.

## 2.5 Techniques and Data Collection Instruments

Collection in this study used several techniques including a questionnaire (questionnaire) used to measure the independent variable (independent), the test was used to measure the dependent variable (bound), then triangulated the data using in-depth interviews with the related teacher.

## 2.6 Instrument Validity and Reliability

Instruments in this study used two methods, namely expert validation, Prof. Dr. Ir. Dwi Rahdiyanta, M.Pd, as an expert and the construct validity test was carried out by testing the validity and reliability with students who were not respondents in this study. The sample used to measure the validity and reliability of 25 people. Test the validity using the *product moment* with the help of *software excel 2016*, the results obtained in the *blended learning* are all valid statement items, the learning outcomes variable are all valid items. While the reliability of the two instruments is at a very high level.

## 3 Results

### 3.1 Description of Data

Based on the data that has been obtained then an analysis is carried out with the help of the SPSS (*Statistical Package for the Social Sciences*) application Version 16 and described descriptively and will be described as follows:

#### 3.1.1 Blended Learning

The results of the calculation obtained the lowest student answers 55, the largest answer was 85, the average value was 69.5, the median was 69, the mode was 71, the standard deviation was 6.5. The frequency distribution of *blended learning* can be seen in Fig. 2.

Based on Fig. 2 the frequency distribution of the most data is in the medium criteria with a total of 30.4%

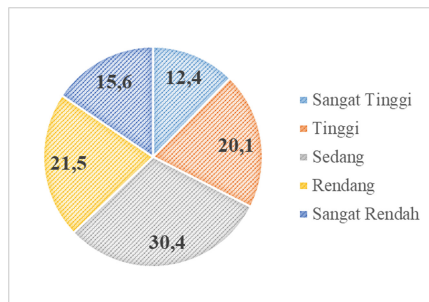
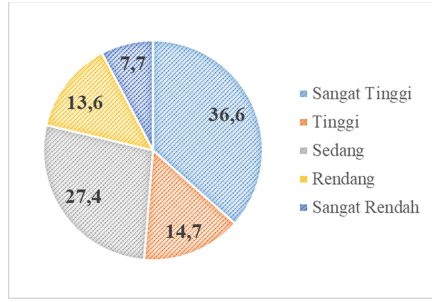


Fig. 2. Frequency Distribution Diagram



**Fig. 3.** Frequency Distribution Diagram

### 3.1.2 Student Learning Outcomes

The results of the calculation show that the smallest student’s answer is 35, the largest answer is 90, the average value is 69.2, the median is 70, mode of 75, standard deviation of 11.2. The frequency distribution of students’ learning independence data variables can be seen in Fig. 3.

Based on Fig. 3, the frequency distribution of the most data is in very high criteria with a total of 36.6%.

## 3.2 Analysis Prerequisite

Test The prerequisite test in this study uses three testing techniques including the normality test, linearity test and multicollinearity test. The test results are described as follows:

### 3.2.1 Normality

Test The normality test in this study uses the *Kolmogorov-Smirnov* with the help of *SPSS software* version 16 results the obtained sig value  $0.230 > 0.05$  based on these results it can be concluded that the results of all data are normally distributed.

### 3.2.2 Linearity

Test the linearity test in this study using *SPSS* version 16 software. The results of the linearity test for the *blended learning* obtained a value of  $0.175 > 0.05$ , based on this value, it can be concluded that there is a linear relationship between the *blended learning* variable and the learning outcome variable.

### 3.2.3 Test Multicollinearity

The multicollinearity test was performed using *tolerance* and *VIF (Variance Inflation Factor) calculations*. Multicollinearity testing using *SPSS software* version 16 multicollinearity testing on the *blended learning* ( $X_1$ ), the results of the *tolerance* are  $0.585 > 0.10$  and the *VIF* value is  $1.710 < 10.0$ . Based on these two values, it can be concluded that the multicollinearity test on the *blended learning* there is no multicollinearity.

### 3.3 Hypothesis

Testing Hypothesis testing in this study uses a simple regression test to test the hypothesis of one independent variable on one dependent variable, the significance level used is 5%, calculations with the help of *SPSS software* version 16. Hypothesis testing is carried out to determine the effect between *blended learning* (X1) on the variable of student learning outcomes (Y). The results of the analysis obtained the value of sig. of  $0.000 < 0.05$ . The results of the analysis are reinforced by the results of interviews with teachers at Sleman Vocational School which states that the effect of applying *blended learning* during the implementation of LFFL policies is influenced by how the selection of learning mix is used, generally the mixture used is offline and online learning in offline or face-to-face learning, the teacher provides reinforcement. And material that is difficult for students to understand if it is studied from home, then in online learning or from home, teachers can meet virtual through various applications such as *google meet*, *zoom*, *whatsapp* etc., from several teachers in different schools *whatsapp* is the most frequently used application for online learning. While providing teaching materials or materials such as PDF, PPT, Video and others, are also provided through the application. So it can be concluded that there is a positive and significant influence between *blended learning* on student learning outcomes in the basic metal formation material at SMK throughout Sleman Regency.

## 4 Conclusion

Based on the analysis of the hypothesis and strengthened by the results of interviews, it can be concluded that has *blended learning* a positive and significant effect on student learning outcomes in basic metal forming materials at SMK throughout Sleman Regency. Based on the analysis results obtained sig value  $0.000 < 0.05$ .

## References

1. M. J. Hossain, "Impact of online education on fear of academic delay and psychological distress among university students following one year of COVID-19 outbreak in Bangladesh," *National Library medicine*, 2021.
2. Kemendikbud, "Saatnya PJJ di Evaluasi," 2021. <https://itjen.kemdikbud.go.id/public/post/detail/saatnya-pjj-di-evaluasi> (accessed Sep. 05, 2021).
3. Peraturan Menteri Pendidikan Nasional Republik Indonesia Nomor 22 Tahun 2006, *Standar Isi untuk Satuan Pendidikan Dasar dan Menengah*. 2006.
4. BPS, "Tingkat Pengangguran Terbuka," 2021. <https://www.bps.go.id/pressrelease/2021/05/05/1815/februari-2021--tingkatpe-ngangguran-terbuka--tpt--sebesar-6-26-persen.html> (accessed May 05, 2021).
5. A. Kurniawan, "Profil Lulusan Smk Terhadap Tingkat Penyerapan Tenaga Kerja Di Indonesia Tahun 2018/2019 (2685-5739)," 2019. <http://repositori.kemdik-bud.go.id/17773/1/09ProfilLulusanSMKterhadapTingkatPenyerapanTenagaKerjaDiIndonesiaTahun2018-2019.pdf> (accessed Sep. 27, 2021).
6. R. H. Syah, "Dampak Covid-19 pada Pendidikan di Indonesia: Sekolah, Keterampilan, dan Proses Pembelajaran," *SALAM: Jurnal Sosial dan Budaya Syar-i*, 2020, Accessed: Sep. 27, 2021. [Online]. Available: <https://doi.org/10.15408/sjsbs.v7i5.1>

7. N. Nasution, *Buku Model Blended Learning*. Accessed: Sep. 27, 2022. [Online]. Available: [http://repository.unp.ac.id/26576-1/0\\_BukuModelBalndedLearning.pdf](http://repository.unp.ac.id/26576-1/0_BukuModelBalndedLearning.pdf)
8. I. Pradipta, I. Chavidowaty, and R. Hermawan, “(2020). Implikasi Penerapan Blended Learning Selama Covid – 19 untuk Mata Pelajaran Simulasi Digital Kelas X SMK. *Edudikara: Jurnal Pendidikan dan Pembelajaran*, 5(4), 207.,” *Edudikara: Jurnal Pendidikan dan Pembelajaran*, 2020.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter’s Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

