

## **The Influence of Effective Principal's Leadership and the Availability of Infrastructure on the Successful Implementation of Distance Learning**

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Article History: Received on 26 April 2023, Revised on 15 July 2023,  
Published on 18 July 2023

**Abstract:** This study aims to determine: (1) the influence of the effectiveness of the principal's leadership on the successful implementation of distance learning, (2) the effect of the availability of facilities and infrastructure on the successful implementation of distance learning, and (3) the effect of the effectiveness of the leadership of the principal and infrastructure together with the implementation of distance learning. This research was conducted at SMK Negeri 1 Prabumulih with a total of 80 teachers as respondents. This research was quantitative correlation and descriptive methods, while the sampling was done by random sampling, the research instrument uses a questionnaire. Validity test using construct validity and empirical validity. While the reliability test uses Cronbach's Alpha. Analysis prerequisite test using normality, homogeneity, and linearity test. Data were analyzed using simple linear regression techniques, multiple linear regression and t-test. The results of the study show that (1) there is an effect of the effectiveness of the principal's leadership on the successful implementation of distance learning, (2) there is an effect of the availability of facilities and infrastructure on the success of the implementation of distance learning, and (3) there is an influence of the effectiveness of the leadership of the principal and infrastructure as a whole. together on the implementation of distance learning.

**Keywords:** Availability of Facilities and Infrastructure, Distance Learning, Leadership Effectiveness

### **A. Introduction**

Not only in Indonesia, but almost all over the world, the Covid-19 pandemic has had a major impact on people's lives. Schools have developed along with life in general. Khan et al., (2020) claim that Covid 19 changed the educational practices of future generations in a different way, around the world are becoming more connected. The role of the instructor will then be redefined highlighting the importance of future-directed life skills, and increasing the contribution of technology in aiding Education.

Khan et al., (2020) talks about how Covid-19 has accelerated improvements in schools, distance learning which is largely dependent on technology and informatics, rapidly replacing face-to-face learning approaches used in school. The school principal's leadership has a significant impact on the effectiveness of teaching staff in conducting learning in schools during a pandemic. In implementing distance learning the availability of facilities and infrastructure requires more attention.

The Ministry of Education disbursed trillions of rupiah in funds to facilitate distance learning by providing internet quota assistance for both educators and students during distance learning. The ministry also issued a ministerial regulation permitting the purchase of education fee quotas for educators and students with BOS (School Operational Assistance) funds.

Situations like this are very interesting to discuss in a study. Therefore, the authors argue that research on the influence of the effectiveness of the leadership of the principal and the availability of infrastructure on the successful implementation of distance learning at SMK Negeri 1 Prabumulih is important.

The hypotheses put forward in this study 1) the effectiveness of the principal's leadership influences the implementation of distance learning (PJJ) at SMK Negeri 1 Prabumulih; 2) the availability of infrastructure has an impact on the implementation of PJJ at SMK Negeri 1 Prabumulih; and 3) the implementation of PJJ at SMK Negeri 1 Prabumulih is influenced by the effectiveness of the principal's leadership and infrastructure.

## **B. Methods**

This research uses quantitative research methods. Data collection and analysis using scientific methodology for quantitative and qualitative data, both interactive and non-interactive, experimental and non-experimental (Khaldi, 2017). Quantitative research is research that is used to answer problems through careful measurement techniques for certain variables, regardless of the context of time and place, the type of data collected, especially quantitative data, or the conclusions reached (Arifin, 2012).

Collecting data in this study is a questionnaire. The questionnaire is a collection of questions distributed to respondents who agree to provide answers in response to requests for use (Singer and Couper, 2017). The questionnaire used is closed and dimensional, that is, it contains statements that have been written before which the respondent only needs to fill in by checking the box on the checklist, making it easier for the respondent to answer the question. A total of 30 questions or statements about each independent variable of the principal's leadership effectiveness (X1), the independent variable the availability of infrastructure (X2), and the dependent

variable will be asked by the researcher, namely the successful implementation of distance learning at SMK Negeri 1 Prabumulih (Y).

The population in this study were all teachers and teaching staff at SMK Negeri 1 Prabumulih, where the number of SMK Negeri 1 Prabumulih teachers and teaching staff in 2022 was 114 people, and the samples in this study were 80 teachers/educational staff at Public Vocational High School 1 Prabumulih. The sample was taken from a population randomly selected from the population at SMK Negeri 1 Prabumulih.

The methodology used in this research is 1) determining the problem to be studied at this stage by visiting the research location, namely SMK Negeri 1 Prabumulih; 2) the second step is the teacher who was selected as the sample and then given a questionnaire; 3) the third step, at this stage, the data is analyzed, reviewed, and conclusions are drawn.

The data analysis techniques in this study are 1) data normality test, which is an analysis compilation test that determines whether or not a normally distributed regression model has dependent and independent variables. The distribution of a feasible regression model data must be normal or close to normal. The data normality test formula can be used with SPSS ver. 26.00 program to determine whether data distribution is normal or not by looking at graphs or normal probability plots that distinguish cumulative distribution from actual data with cumulative distribution and normal distribution; 2) The variance homogeneity test is designed to find out whether there is homogeneity of variation between groups of bond variable scores based on the independent similarity factor values. With the Bartlett test, the variance homogeneity test was carried out; 3) The linearity test seeks to determine whether there is a statistically significant linear relationship between the variables in this study, because superior data must have a linear relationship between the predictor variable (X) and the mixed variable (Y). SPSS program version 26.00 was used in this study to test the linearity of the data; 4) Simple linear regression analysis, relationship with context and research hypothesis formulation, followed by applying a simple regression model for analysis. The equation that describes the relationship of the independent variables to each other The following direct regression equation captures the relationship between the independent variables the availability of facilities and infrastructure (X<sub>2</sub>) and the implementation of PJJ (Y) and the effectiveness of the principal's leadership (X<sub>1</sub>) and the implementation of PJJ (Y); 5) Multiple regression analysis. By using software assisted by SPSS version 26.00, multiple regression analysis is used to measure the extent to which the effectiveness of infrastructure and leadership influences the implementation of PJJ; 6) T-test, t statistical test is used to find out how much the contribution of each independent variable to the dependent variable and how much the variance of the dependent variable can be explained by each different explanatory variable.

### C. Results and Discussion

#### Result

#### The Influence of the Principal’s Leadership Effectiveness on the Success of Distance Learning

Based on these findings, the relationship between the effectiveness of school principal leadership and distance learning can be seen through the results of Pearson correlation analysis and simple linear regression with the t-test conducted with SPSS version 26.0. The hypothesis is as follows:

Table 1. Table of Pearson Correlation Effectiveness of the Principal’s leadership on the Success of Distance Learning

		Leadership	Distance Learning
Leadership	Pearson Correlation	1	.317**
	Sig. (2-tailed)		.004
	N	80	80
Distance Learning	Pearson Correlation	.317**	1
	Sig. (2-tailed)	.004	
	N	80	80

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Based on the table above, the significance value is  $0.004 \pm 0.05$  which indicates a significant relationship between the principal’s leadership effectiveness variable (X1) and the PJJ success variable (Y). The r-count of the relationship between the effectiveness of the principal’s leadership (X1) and the success of PJJ (Y) is  $0.317 > r$  table 0.220 based on the data above. Thus, it can be concluded that there is a link between the effectiveness of the principal’s leadership and the success of PJJ.

Table 2. Simple Linear Regression with t-test Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	85.471	14.537		5.880	.000
Leadership	.333	.113	.317	2.954	.004

a. Dependent Variable: PJJ

Based on the test data above, it can be seen that the significant value (sig) of the principal’s leadership variable (X1) is  $0.004 \pm 0.05$ , rejecting H0 and accepting Ha, indicating that the effectiveness of the principal’s leadership influences success. PJJ at SMK Negeri 1 Prabumulih. Meanwhile, because the t value of the principal leadership

effectiveness variable is  $2.954 > t$  table  $1.667$ , it can be concluded that the principal's leadership effectiveness influences the success of PJJ at SMK Negeri 1 Prabumulih.

### Effect of Availability of facilities and infrastructure on distance learning

The results of calculating the correlation between the availability of facilities and infrastructure for distance learning can be seen in the following table.

**Table 3. Correlation Results of Availability of Facilities and Infrastructure to Distance Learning**

		Availability Fac	PJJ
Availability Fac	Pearson Correlation	1	.239'
	Sig. (2-tailed)		.033
	N	80	80
Distance Learning	Pearson Correlation	.239'	1
	Sig. (2-tailed)	.033	
	N	80	80

\*. Correlation is significant at the 0.05 level (2-tailed).

Based on the table above, the significance value is  $0.033 \pm 0.05$ , which indicates that there is a significant relationship between the variable availability of facilities and infrastructure and the success variable of PJJ. The r-count value of the relationship between the effectiveness of the principal's leadership (X1) and the success of PJJ (Y) is  $0.239 > r$  table  $0.220$  based on the data above. Thus, it can be concluded that there is a link between the availability of facilities and infrastructure with the success of PJJ at SMK Negeri 1 Prabumulih.

**Table 4. Simple Linear Regression with t test**

Model	Coefficients <sup>a</sup>				t	Sig.
	Unstandardized Coefficients		Standardized Coefficients	Beta		
	B	Std. Error				
Availability Fac	99.273	13.394		7.412	.000	
	.225	.103	.239	2.173	.033	

a. Dependent Variable: PJJ

Based on the data from the test results above, it can be seen that the significance value (sig) of the principal's leadership variable (X1) is  $0.033 \pm 0.05$ , meaning that rejecting H0 and accepting Ha means that there is an influence on the same availability and facilities for the success of PJJ at SMK Negeri 1 Prabumulih. Meanwhile, the calculated t value of the principal's leadership effectiveness variable is  $2.173 > t$  table  $1.667$  indicating that the availability of facilities and infrastructure influences the success of PJJ at SMK Negeri 1 Prabumulih.

Ahmad (2021) revealed that the management of facilities and infrastructure is very important because the management of facilities and infrastructure ensures that

educational institutions are maintained and clear. School administrators must be accountable for facilities and infrastructure, especially school principals, so that the learning process can run well and influence each other.

### **The Influence of the Principal’s Leadership Effectiveness and Availability of Facilities and Infrastructure on Distance Learning**

Multiple linear regression analysis with table F test can be used to determine the relationship or influence between the effectiveness of the principal’s leadership and the availability of facilities and infrastructure in distance learning.

The F table value for the F test with a significance level of 0.05 can be calculated using the formula:  $F_{table} = F(k;n-k) = F(2;80-2) = F(2;78) = 3.11$ , so with a constant of 2 and 80 samples collected, the F table value is 3.11.

**Table 5. Test Results for the Coefficient of Determination between X1 and X2 for Y**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.400 <sup>a</sup>	.160	.138	12.235

Based on the table above the coefficient of determination or R Square is 0.160 (16%), indicating that the effectiveness of the principal’s leadership (X1) and the availability of infrastructure (X2) influence the success of PJJ at SMK Negeri 1 Prabumulih 1 (Y) by 16%, while the remaining 84% is influenced by other variables.

**Table 6. Multiple Regression F Test Results Between X1 and X2 for Y**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	2191.241	2	1095.620	7.319	.001 <sup>a</sup>
Residual	11526.147	77	149.690		
Total	13717.388	79			

Based on the data in the table above, the significant value of the influence of the effective leadership of the school principal and the simultaneous availability of facilities and infrastructure for distance learning is  $0.001 \pm 0.05$ , and the calculated F value is  $7.319 > F_{table} 3.11$  which means that  $H_0$  is rejected or  $H_a$  accepted, meaning that there is a 16% influence on distance learning between the effectiveness of the principal’s leadership and the availability of facilities and infrastructure simultaneously, the rest is influenced by other factors.

**Table 7. t-test Results between X1 and X2 on Y**

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	55.585	19.101			2.910	.005
Leadership & Availability Fac	.336	.110	.320		3.067	.003
	.229	.098	.243		2.328	.023

The significant values of the effectiveness of the principal’s leadership and the availability of infrastructure are 0.003 and 0.023 respectively 0.05 which indicates that there is an influence of the effectiveness of the principal’s leadership and the availability of infrastructure on the success of PJJ at SMK Negeri 1 Prabumulih. Based on the findings of this analysis, the variable of the effectiveness of the principal’s leadership (X1) has less influence on the success variable of PJJ implementation (Y) compared to the variable availability of infrastructure (X2).

## Discussion

### The Effect of Principal Leadership Effectiveness on Distance Learning

The research findings show that the principal’s leadership effectiveness has a significant effect on teacher distance learning at SMK Negeri 1 Prabumulih. The significance value (sig) of the principal’s leadership variable (X1) is  $0.004 \pm 0.05$ , meaning that  $H_0$  is rejected and  $H_a$  is accepted, meaning that the effectiveness of the principal’s leadership influences the success of PJJ at SMK Negeri 1 Prabumulih. Meanwhile, because the t value of the principal leadership effectiveness variable is  $2.954 > t$  table 1.667, it can be concluded that the principal’s leadership effectiveness influences the success of PJJ at SMK Negeri 1 Prabumulih.

It is clear that the results of data analysis starting from the description of empirical data, normality, linearity, linear regression test and t-test, calculating data analysis shows that the effectiveness of the principal’s leadership has an influence on the successful implementation of PJJ at SMK Negeri 1 Prabumulih.

The more effective the leadership of the school principal, the better the teacher’s distance learning at SMK Negeri 1 Prabumulih will be (Kurniadi et al, 2020; Desiriani et al., 2022; Fitria, 2021). Conversely, if the principal’s leadership is ineffective, distance learning for teachers at SMK Negeri 1 Prabumulih will be poor.

### The Effect of Availability of Facilities and Infrastructure on Distance Learning

With a significant value (sig) of the school principal’s leadership variable (X1) of  $0.033 \pm 0.05$ , it can be concluded that reject  $H_0$  and accept  $H_a$ , indicating the influence of the availability of facilities and infrastructure on the success of PJJ at SMK Negeri 1 Prabumulih. Meanwhile, the calculated t value of the principal’s leadership

effectiveness variable is  $2.173 > t$  table  $1.667$  indicating that the availability of facilities and infrastructure influences the success of PJJ at SMK Negeri 1 Prabumulih. So that the better or higher the availability of teacher facilities and infrastructure at SMK Negeri 1 Prabumulih, the distance learning for teachers at SMK Negeri 1 Prabumulih also increases, and vice versa.

Apart from within oneself, the availability of facilities and infrastructure also comes from outside such as wages/salaries, conditions of place and relationships with colleagues (Noviani, 2021; Laseinde et al, 2020). Therefore, if the availability of facilities and infrastructure, both from within and from outside, can be achieved, it will also have an impact on distance learning that is felt by teachers at SMK Negeri 1 Prabumulih.

### **The Effect of Principal Leadership Effectiveness and Availability of Facilities and Infrastructure on Distance Learning**

The research findings show that the leadership effectiveness of the principal has a simultaneous and significant effect on the availability of distance learning facilities and infrastructure. The significant values of the principal's leadership effectiveness and the availability of infrastructure are  $0.003$  and  $0.023$   $0.05$  respectively indicating that there is influence on the effectiveness of the principal's leadership. The impact of schools and infrastructure on the success of PJJ at SMK Negeri 1 Prabumulih. From the results of this analysis, it can be concluded that the variable effectiveness of the principal's leadership (X1) has less influence on the successful implementation of PJJ (Y) compared to the variable availability of infrastructure (X2).

Because the value of the coefficient of determination generally ranges from  $0-1$ , which is  $0.160$ , the smaller the R square value, the weaker the effect, and conversely, if it is closer to  $1$ , the stronger the effect, so that the influence of the effectiveness of the principal's leadership and the availability of facilities and infrastructure simultaneously has strong influence on teacher distance learning at SMK Negeri 1 Prabumulih.

The influence of the effectiveness of the leadership of the principal and the simultaneous availability of facilities and infrastructure on teacher distance learning (Astuti et al., 2020) with a strong influence can prove the previous explanation that the effectiveness of the leadership of the principal has a strong effect on teacher distance learning, meaning that if the effectiveness of the leadership of the principal is carried out well, then learning long distance would be fine too (Rusmita et al., 2023). Likewise for the availability of facilities and infrastructure that have a strong influence on teacher distance learning, meaning that if the availability of facilities and infrastructure is high, distance learning is also high. When the three variables are combined, namely between the effectiveness of the principal's leadership and the

availability of facilities and infrastructure on teacher distance learning, the effect is also strong.

#### **D. Conclusion**

Based on the research findings and discussion previously described, it can be interpreted that 1) there is an influence of the effectiveness of the principal's leadership on the availability of facilities and infrastructure at SMK Negeri 1 Prabumulih; 2) The availability of facilities and infrastructure influences distance learning (PJJ) at Prabumulih 1 State Vocational School; and 3) there is influence between the effectiveness of the principal's leadership and the availability of facilities and infrastructure through distance learning (PJJ) conducted by teachers at SMK Negeri 1 Prabumulih.

#### **E. Acknowledgement**

We would like to express our acknowledgement to our respondents, colleagues who helped us in this article.

#### **References**

- Ahmad, M. (2021). Management of Facilities and Infrastructure in Schools. *Akademika: Jurnal Teknologi Pendidikan*, 10(01), 93-112.
- Arifin, Z. (2012). *Penelitian Pendidikan Metode dan Paradigma Baru [New Methods and Paradigm Educational Research]*. Bandung: Remaja Rosdakarya.
- Astuti, R. W., Fitria, H., & Rohana, R. (2020). The influence of leadership styles and work motivation on teacher's performance. *Journal of Social Work and Science Education*, 1(2), 105-114.
- Desiriani, D., Wisetsri, W., & Utama, H. B. (2022). The Impact of the Principal's Leadership Style and Work Environment on Learning Effectiveness. *PPSDP International Journal of Education*, 1(2), 240-249.
- Fitria, H. (2021, July). The Impact of Digital Literation and Infrastructure Facilities of the Output of Teachers in SMK Negeri Prabumulih City. In *International Conference on Education Universitas PGRI Palembang (INCoEPP 2021)* (pp. 540-543). Atlantis Press.
- Khaldi, K. (2017). Quantitative, qualitative or mixed research: which research paradigm to use?. *Journal of Educational and Social Research*, 7(2), 15.
- Khan, S., Raza Rabbani, M., Thalassinis, E. I., & Atif, M. (2020). Corona virus pandemic paving ways to next generation of learning and teaching: futuristic cloud based educational model. *Available at SSRN 3669832*.
- Kurniadi, R., Lian, B., & Wahidy, A. (2020). Visionary leadership and organizational culture on teacher's performance. *Journal of Social Work and Science Education*, 1(3), 249-256.
- Laseinde, T., Oluwafemi, I., Pretorius, J. H., & Oluwafemi, J. (2020). The impact of work environment in concurrence to productivity in higher institutions.

- In *Advances in Social and Occupational Ergonomics: Proceedings of the AHFE 2019 International Conference on Social and Occupational Ergonomics, July 24-28, 2019, Washington DC, USA 10* (pp. 309-320). Springer International Publishing.
- Noviani, E. (2021). The Importance of Providing Motivation to Bring Work Spirit That Impact on Increasing Performance. *Akademik: Jurnal Mahasiswa Ekonomi & Bisnis*, 1(2), 49-58.
- Rusmita, R., Fitria, H., & Mulyadi, M. (2023). Principal's Leadership in Teacher's Performance Development. *Journal of Social Work and Science Education*, 4(1), 337-344. <https://doi.org/10.52690/jswse.v4i1.434>
- Singer, E., & Couper, M. P. (2017). Some methodological uses of responses to open questions and other verbatim comments in quantitative surveys. *Methods, data, analyses: a journal for quantitative methods and survey methodology (mda)*, 11(2), 115-134.