International Journal of Advanced Educational Research
ISSN: 2455-6157; Impact Factor: RJIF 5.12
Received: 16-09-2019; Accepted: 18-10-2019
www.educationjournal.org
Volume 4; Issue 6; November 2019; Page No. 67-71

The influence of leadership from school principals and learning facilities and work motivation on teacher competencies in productive vocational programs in the city of Manado

Harrychoon Angnalisang[1], Benny B Binilang[2], Joulanda AM Rawis[3], Mozes M Wullur[4]
[1] Student of Doctor Program, Study Program of Education Management, Postgraduate Program, Manado State University, Indonesia
[2, 3, 4] Postgraduate Program, Manado State University, Indonesia

Abstract
This study aims to describe and analyze the influence of school principal leadership, learning tools, and teacher work motivation on teacher competency in productive programs at State Vocational Schools in Manado. The research method used was a survey method, with a correlational approach and path analysis. The population of this research is all productive vocational program teachers in the State Vocational School in the city of Manado, while the sample of this study is the productive program teachers in the State Vocational School in the City of Manado as many as 71 people taken by proportional stratified random sampling. The results showed that: (1) the leadership of the principal (X1) and the learning tools (X2) had a positive and significant direct effect on teacher work motivation, respectively; (2) the leadership of the school principal (X1), learning facilities (X2), and teacher work motivation (Z) have a positive and significant direct effect on teacher competence, which is 58.2%, 62.7%, and 62.9% in a row; and (3) the leadership of the school principal and learning facilities each indirectly, positively, and not significantly influence teacher competence through work motivation. Based on these findings, it is recommended to improve the quality of teacher competence directly. This is done by improving the quality of leadership of the school principal, means of learning, and teacher work motivation.

Keywords: principal leadership, learning facilities, teacher work motivation, teacher competence

1. Introduction
Learning activities is a complex process. In order for students to easily understand and digest the subject matter, teachers must be creative and innovative in using learning models and learning tools. Supported by a correct understanding of the curriculum and adequate learning facilities and good work motivation will make it easier for teachers to explain the subject matter and will also facilitate understanding for students. The unavailability of learning facilities will make it difficult for a teacher to meet the expected target of competency standards, as well as if the work motivation of a teacher is low then it can result in the main task in terms of learning being constrained.

The condition of education in Indonesia, due to the impact of globalization, requires teachers to have initiative, creative, responsive, and innovative in educating their students so that national education goals are still achieved. The ability to anticipate changing times due to the impact of globalization earlier by finding and finding the best new ways to be able to "survive" in an effort to improve the intellectual quality and morality of students to face competition and life challenges in the future, and always seek and find approaches new approaches and new ways of learning that are the competence of professional teachers. The implementation of the teacher's ability in the form of initiative, creative, responsive and innovative will continue to influence the competency of the teacher so that basically there is an increase in the teacher's competency on an ongoing basis. Conversely, if teachers are indifferent and do not care about the development of students let alone face the impact of globalization, the result is the quality of learning will decrease, the level of school productivity will decrease, the quality of graduates will be less qualified, and educational goals are not achieved and without realizing teacher professionalism will decline. In other words, teacher competency is low.

There are several things that become reality that raise the concerns of educational leaders, especially regarding teacher competence, leadership of school principals, learning tools and teacher work motivation such as:

1. Findings from the Light Teacher Foundation by conducting the first research with 2,467 teachers in 4,000 schools during the period 2006 to 2010 explained that many teachers did not read curriculum documents, consequently they did not understand the substance of the curriculum and had difficulty developing learning plans according to environmental potential. (Kompas, 4 January 2014)[1].
2. The background was the Teacher Competency Test (UKG) because the Human Capital Index of Indonesia in 2000 was ranked 109 out of 147 countries and in 2018 was ranked 87th out of 157 countries with a score of 0.53 or 53 %. Indonesia's ranking is below the countries in the ASEAN region such as Malaysia ranked 61st, Thailand 67th; The 77th Philippines and Vietnam rose from 108th to 60th and the East Asia-Pacific HCI countries were 0.62. An HCI value of 0.53 or 53% means that every child born in Indonesia in 2018 has a 53% chance to live growing as long as he completes his education and has full access to health. (World Bank Newsletter, Thursday, October 11, 2018 in Nusa Dua Bali). This encourages the Indonesian government to improve social assistance programs, improve nutrition and children's education to support

the productivity of future generations. One effort is a program to improve teacher quality by holding a teacher competency test every year in all provinces in Indonesia.

Teacher competency test conducted by the North Sulawesi Provincial Education Office in 2012 in the context of mapping human resources in this case teachers. Although it has been strived in such a way but it turns out the quality of education at the level of primary and secondary schools/vocational remains not encouraging because in 2018 and 2019 this Computer-Based National Examination (UMBK) in North Sulawesi ranks 27th out of 34 provinces and the city of Manado is the provincial capital North Sulawesi with the most number of schools and students is more specifically the Vocational High School (SMK) which is the focus of this study.

Until now, it has been more than 7 years, but the results for mapping and equitable distribution of resources such as teachers, learning facilities, and other programs have yet to be seen. The problems in this study can be formulated as follows:

1. Is there an indirect positive effect on the leadership of the principal on teacher competency through the work motivation of productive vocational program teachers in the City of Manado?
2. Is there an indirect positive effect of learning tools on teacher competence through work motivation of productive vocational program teachers in the City of Manado?

2. Research Methods

The method used in this study is a survey method, with a correlational approach and path analysis. This research was conducted at the State Vocational School in the City of Manado with the population being all characteristics related to the four variables of this study, while the population unit was the entire productive program teachers of the State Vocational School in the city of Manado. Samples were taken proportionally randomly using a sampling technique using the formula of Taro Yamane or Slovin in (Riduwan, 2008), as below [2]:

$$n = \frac{N}{N.d^2 + 1}$$

The result is n = 64,788 or rounded up by 71 respondents as a sample, as in Table 1 below:

Table 1: Data on Number of Teachers in Productive and Normative Administration Programs

No.	School Name	Number of Teachers	Productive Program	Sample
1	SMK N 1	109	55	16
2	SMK N 2	112	49	15
3	SMK N 3	104	40	12
4	SMK N 4	34	17	5
5	SMK N 5	85	25	7
6	SMK N 6	90	33	10
7	SMK N 7	26	5	2
8	SMK N 8	23	8	2
9	SMK N 9	21	8	2
	TOTAL	604	240	71

Data collection techniques by: 1) documentation techniques, to obtain data directly from schools that include a list of productive programs and the number of teachers per productive program as well as other data related to this research and 2) questionnaires arranged according to the Likert model with 5 possible answers arranged based on the lattice of each variable (X1, X2, Z, and Y) with items that have been tested for validity.

3. Result and Discussion

1. Hypothesis Testing

After the validity and reliability tests for non-sample data and normality, linearity, and multicollinearity tests for sample data are conducted, all inferential test requirements have been fulfilled. Next, 7 hypotheses are proposed and what is stated here is only the sixth and seventh hypotheses using path analysis.

The sixth hypothesis: there is an influence of leadership from the principal on teacher competence through the work motivation of productive vocational program teachers in the city of Manado. Statistically, this hypothesis can be formulated as follows:

H_0: $\beta_{1.z.y} \leq 0$

H_1: $\beta_{1.z.y} > 0$

To determine the influence of leadership from the principal on teacher competence through teacher motivation, a path analysis is performed. The steps of the path analysis are as follows:

1) Calculate the Model Coefficient of Path I

At this stage the model I path coefficient will be calculated. Model path coefficient I is obtained from Table 2, namely by analyzing the influence of leadership from the principal and learning tools on teacher motivation with SPSS. It can be seen that the value of Sig. the two variables, namely X1 = 0.003 and X2 = 0,000 less than 0.05. These results provide the conclusion that the regression model I, namely the variables X1 and X2 significantly influence Y.

Table 2: Leadership Regression Test Results from School Principals and Learning Facilities on Teacher Work Motivation

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	32.425	10.089		3.214	.002
	Leadership of the Principal	.257	.084	.264	3.059	.003
	Learning Facilities	.534	.070	.659	7.629	.000
a. Dependent Variable: Teacher Work Motivation						

Table 3: Results of Analysis of Leadership Variants from the Principal and Learning Facilities on Teacher Work Motivation

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15106.174	2	7553.087	104.161	.000[b]
	Residual	4930.924	68	72.514		
	Total	20037.099	70			
a. Dependent Variable: Teacher Work Motivation						
b. Predictors: (Constant), Learning Facilities, Leadership of the Principal						

Table 4: Correlation Test Results between Leadership of the Principal and Learning Facilities on Work Motivation

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.868[a]	.754	.747	8.515
a. Predictors: (Constant), Learning Facilities, Leadership of the Principal				

The value of R square in Table 4. is 0.754. This shows that the contribution of the influence of X1 and X2 to Y amounted to 75.4%, while the remaining 24.6% was influenced by other variables not included in the study. Meanwhile, the value of e1 is obtained by the formula: $e_1 = \sqrt{1 - 0.754} = 0.496$. Thus, the path diagram for model I is obtained as shown in Figure 1.

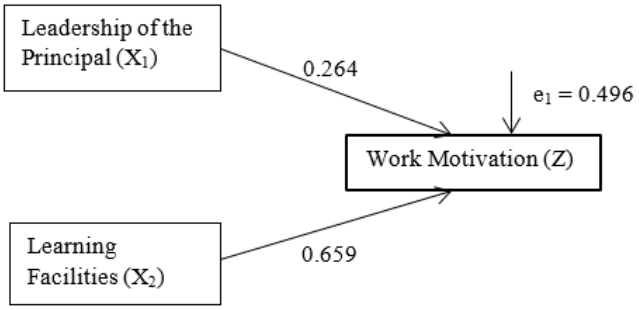

Fig 1: Model I Path Diagram

2) Calculate the Model Coefficient of Path II

At this stage the Model II Path coefficient will be calculated. The Model II path coefficients are obtained from Tables 5 and 6 i.e. by analyzing the influence of leadership from the principal, learning facilities, and teacher work motivation simultaneously on teacher competencies with SPSS.

Table 5: Results of Analysis of Variance between the Leadership of the Principal, Learning Facilities, and Work Motivation on Teacher Competence

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	20911.608	3	6970.536	58.987	.000[b]
	Residual	7917.491	67	118.172		
	Total	28829.099	70			
a. Dependent Variable: Teacher Competency						
b. Predictors: (Constant), Teacher Work Motivation, Leadership of the Principal, Learning Facilities						

Table 6: Results of Analysis of Variance between the Leadership of the Principal, Learning Facilities, and Work Motivation on Teacher Competence

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	9.017	13.823		.652	.516
	Leadership of the Principal	.382	.114	.328	3.342	.001
	Learning Facilities	.308	.122	.317	2.528	.014
	Teacher Work Motivation	.339	.155	.283	2.193	.032
a. Dependent Variable: Teacher Competency						

It can be seen from Table 6 that the Sig. three variables, namely X1 = 0.01 < 0.05; X2 = 0.014 < 0.05, Z = 0.032 < 0.05. These results provide the conclusion that in Regression Model II, the variables X1, X2, and Z which have a significant effect on Y.

In reality, there are no independent variables, but there is always a correlation with other variables. Likewise, if seen from the position of variables X1 and X2, in practice it is suspected that there is a correlation between the two. That is why, in Figure 3 two-way arrows are used to indicate the correlation between X1 and X2 with a value of 0.718. However, after the multicollinearity test was carried out it appeared that the coefficients such as VIF and tolerance gave an indication that the correlation between X1 and X2 did not meet the multicollinearity category. This means that the quality of the correlation does not interfere with the process of multiple regression analysis or path analysis in analyzing relationships with other variables.

Table 7: Regression Test Results between Leadership of the Principal, Learning Facilities, and Work Motivation on Teacher Competence

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.852[a]	.725	.713	10.871
a. Predictors: (Constant), Teacher Work Motivation, Leadership of the Principal, Learning Facilities				

The value of R square in Table 7 is 0.725. This shows that the contribution of the influence of X1, X2, and Z to Y amounted to 72.5%, while the remaining 27.5% was influenced by other variables that were not present in the study. Meanwhile, the value of e2 is obtained by the formula: $e_2 = \sqrt{1 - 0.725} = 0.524$. Thus, the model II path diagram is obtained as in Figure 2.

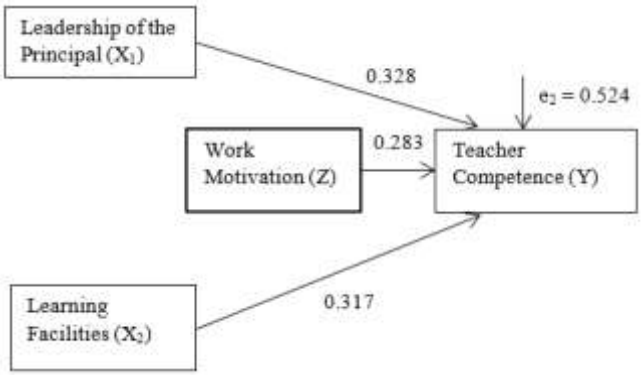

Fig 2: Model I Path Diagram

Thus, the form of the relationship between the leadership variable of the principal (variable X1), learning tools (variable X2), and teacher work motivation (variable Z) with teacher competence (variable Y) is illustrated as shown in Figure 3. Because the $p_{x_1z} = 0.264$, $p_{x_2z} = 0.659$, $e_1 = 0.496$, $p_{x_1y} = 0.328$, $p_{x_2y} = 0.317$, $p_{zy} = 0.283, e_2 = 0.524$, then the equation is obtained:

$$Z = p_{x_1z}X_1 + p_{x_2z}X_2 + e_1$$

$$=> \quad Z = 0.264X_1 + 0.659X_2 + 0.496$$

$$Y = p_{x_1y}X_1 + p_{x_2y}X_2 + p_{zy}Z + e_2$$

$$Y = 0.328X_1 + 0.317X_2 + 0.283\ Z +$$
=> 0.524

The indirect effect of school principal leadership (X1) on teacher competency (Y) through work motivation (Z) can be calculated as follows:

$$p_{x_1 z} \times p_{zy} = 0.264 \times 0.283 = 0.075$$

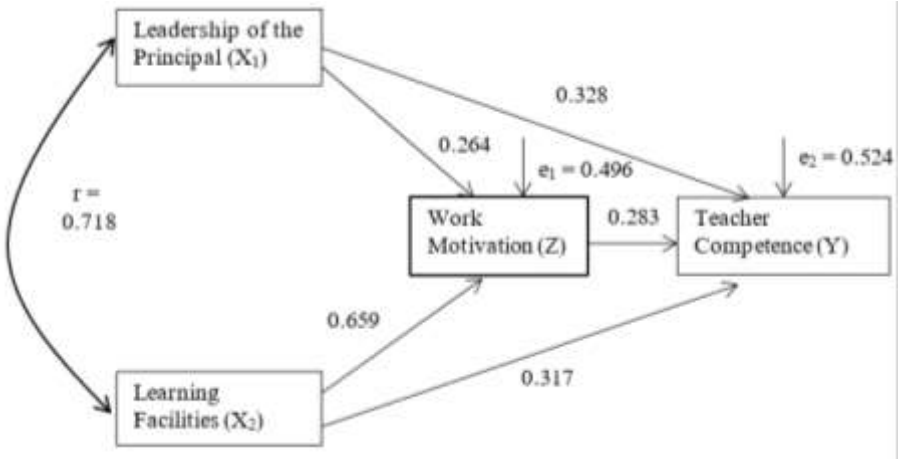

Fig 3: Correlation Coefficient between Variables

Thus, the total influence of leadership from the principal (X1) on teacher competency (Y) is a direct effect plus an indirect effect, which is 0.328 + 0.075 = 0.402. Because the indirect effect is smaller (<) than the direct effect, Ho is accepted and H1 is rejected. In other words, indirectly the leadership of the principal has a positive and insignificant influence on teacher competence through teacher work motivation.

Seventh hypothesis: there is an indirect effect of learning tools on teacher competence through the work motivation of productive vocational program teachers in the City of Manado. Statistically, the above hypothesis can be formulated as follows:

H_0: $\beta_{2.z.y} \leq 0$

H_1: $\beta_{2.z.y} > 0$

To determine the effect of learning facilities on teacher competence through teacher work motivation, a path analysis is carried out, which consists of two steps, namely an analysis of the influence of leadership from the principal and a learning tool on teacher work motivation. Then analyze the influence of school principal leadership, learning tools and teacher work motivation on teacher competence directly as in the sixth hypothesis testing.

Based on the results of the multiple regression analysis between the pair of leadership data from the principal (variable X1), learning tools (variable X2), and teacher work motivation (Z) directly with teacher competence (variable Y), it is known that the value of the path coefficient (standardized beta coefficient) is: $p_{x_1 y} = 0.328$, $p_{x_2 y} = 0.317$, $p_{zy} = 0.283$. Furthermore, based on the results of the multiple regression analysis between the leadership data pair of the principal (variable X1) and learning tools (variable X2) on teacher work motivation (Z), it is known that the path coefficient (standardized beta coefficient) is: $p_{x_1 z} = 0.264$, $p_{x_2 z} = 0.659$.

Therefore, the indirect effect of learning tools (X2) on teacher competency (Y) through work motivation (Z) can be calculated as follows:

$$p_{x_2 z} \times p_{zy} = 0{,}659 \times 0{,}283 = 0{,}186$$

Thus, the total effect of learning facilities (X2) on teacher competence (Y) is the direct effect plus the indirect effect, which is 0.317 + 0.186 = 0.503. Because the indirect effect is smaller (<) than the direct effect, Ho is accepted and H1 is rejected. In other words, indirectly the means of learning through teacher work motivation does not have a significant effect on teacher competence.

The indirect effect of school principal leadership on teacher competence through teacher work motivation. The results of testing the hypothesis states that indirectly, there is a positive and insignificant influence of the leadership of the principal on the competence of teachers of productive vocational programs in the City of Manado through teacher work motivation. In other words, the better the leadership of the principal, the better the work motivation of the teacher. Because teacher work motivation is getting better, as a result teacher competency is getting better but not as good as the direct influence of school leadership on teacher competence. The direct effect of leadership from the principal on teacher competence is significant and greater than the indirect influence of the leadership of the principal on teacher competency through teacher work motivation. So this is a finding that efforts to improve the quality of leadership of principals have a positive and significant direct effect on increasing teacher competency without having to go through intervening variables of teacher work motivation.

The indirect effect of learning tools on teacher competence through teacher motivation. The results of hypothesis testing stated that indirectly, the effect of learning facilities through teacher work motivation on teacher competency in productive programs of State Vocational Schools in Manado City was not significant, even the effect was smaller than the direct effect of learning facilities on teacher competence. This means that increasing teacher competency by

increasing the quality of learning facilities indirectly, through increasing teacher work motivation, does not guarantee significant results, because increasing teacher competency directly by increasing learning means turns out to be greater than the indirect increase. The findings in this study are clear descriptions that the learning facilities are more important in the middle of the teaching and learning process than the facilities in supporting teacher work motivation. In principle, the provision of learning facilities must take precedence over the presence of facilities in motivating teachers to be able to work well. Because learning facilities are a prerequisite (the main requirement) for the ongoing teaching and learning process while the provision of facilities to motivate teachers to feel comfortable working becomes a supporting facility (not the main requirement) in the implementation of teaching and learning.

4. Conclusion

1. There is a significant direct and positive influence between the principal's leadership on the competence of teachers of productive vocational programs in the City of Manado.
2. There is a significant direct and positive influence between learning facilities on the competence of teachers of productive vocational programs in the City of Manado.
3. There is a significant direct and positive influence between work motivation of teachers on the competence of teachers of productive vocational programs in the City of Manado.
4. There is an insignificant indirect and positive influence between the principal's leadership on teacher competence through the work motivation of productive vocational program teachers in the City of Manado.
5. There is an indirect and not significant positive effect between the means of learning on teacher competence through the work motivation of teachers in productive programs of State Vocational Schools in the City of Manado.

References

1. Barnawi Dan, Arifin M, Manajemen Sarana Dan. Prasarana Sekolah. Jogjakarta: Ar-Ruzz Media, 2012.
2. Karwati E. Kompetensi dan Profesionalisme Kepala Sekolah (Membangun Sekolah yang Bermutu). Bandung: Alfabeta, 2013.
3. Mujtahid. Pengembangan Profesi Guru. Malang: UIN-Maliki Press, 2011
4. Roestiyah NK. Strategi Belajar Mengajar. Jakarta: Rineke Cipta, 2004.
5. Sanjaya W. Pembelajaran Dalam Implementasi Kurikulum Berbasis Komputer, Jakarta: Prenada Media, 2005.
6. Sutarto W. Psikologi Industri dan Organisasi: Dalam Suatu Bidang Gerak Psikologi Sumber Daya Manusia. Jakarta: Kencana Prenatal Media Group, 2010.
7. Undang-Undang Republik Indonesia Tahun tentang Guru dan Dosen, 2005.
8. Wukir H. Manajemen Sumber Daya Manusia dalam Organisasi Sekolah. Yogyakarta: Multi Presindo, 2005.