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Submission date: 20-Nov-2021 07:03AM (UTC+0700)

Submission ID: 1708110474

File name: Jurnal_Internasional_5.pdf (1.04M)

Word count: 4403

Character count: 25130



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Interaction effect of teacher certification and principal leadership styles towards teacher performance: Empirical evidence of elementary school at Berau district of East Kalimantan province, Indonesia



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ARTICLE INFO

Article history:

Received 10 July 2019

Received in revised form

9 December 2019

Accepted 10 December 2019

Keywords:

School principal

Leadership styles

Teacher certification

Teachers' performance

Certified teachers

2
ABSTRACT

The Indonesian government applies the Law No. 14/2005 to certify schoolteachers in order to improve the quality of education through the certification of teachers for them to be recognized as professional staff. This is achievable if there is a supporting system from the school principal leadership as these two factors may affect the teachers' performance. Thus, the purpose of this research is to find out the effect of the school principal leadership styles and teacher certification on the teachers' performance in elementary school at Berau Regency, East Kalimantan Province. The sample of this research was formed from 23 out of 151 elementary schools in Berau Regency which is 160 teachers. The research was conducted using a quantitative approach of a comparative method (ex post facto) with 2 x 2 factorial designs. The data were collected with questionnaires and analyzed with two-way analysis of variance (ANOVA). The findings revealed that there is a significant differences between; performance of the certified and uncertified teachers; the teacher performance of the democratic leadership style and the authoritarian one; the performance of the certified and uncertified teachers of the authoritarian leadership style; the performance of the certified and uncertified teachers of the democratic leadership style; and an interaction effect of the leadership styles and the teacher certification towards the teachers' performance. Ultimately, teachers' performance is influenced by the competence and leadership style of the organizational leader.

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1. Introduction

To improve the quality of education, the Indonesian government applies the Law No. 14/2005 to professionally certify school teachers who are teaching in the Indonesian education system. This move is to ensure the quality of the teaching profession as it is one of the determining factors for success in any attempt to upgrade the quality of education in the country. Thus, any innovation in education, curriculum design, and enhancement of human resources generated from the educational systems always begins from the teacher. However, the role of teachers in

contributing to a successful education system can work properly if there is a support system from the school principal, such as leadership. This literally means that the principals and teachers are bound to work together in achieving the objectives of quality education. How this mechanism affects the teachers' performance can be shown from the leadership styles of the principal. In other words, leadership becomes a factor that may affect teachers' performance.

This study is about the effect of teacher certification and principal leadership styles on the teachers' performance. In this study, there are two criteria of the teacher certification e.g., certified and uncertified. There are two styles of principal leadership e.g. democratic and authoritarian. The teacher certification and principal leadership styles are identified as the independent variables while the teachers' performance becomes the dependent variable. The teachers' performance is operationally perceived as teachers' competencies in learning

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<https://doi.org/10.21833/ijaas.2020.02.008>

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devices preparation, learning organization, learning implementation, learning assessment, use of technology, and learning evaluation (Bahri, 2011).

The main purpose of teacher certification is to establish a standard that can identify accomplished teaching in any field and location (Fink, 2001). Thus, the teacher certification program is an effort by the Indonesian government to increase the quality of education in Indonesia. Law of the Republic of Indonesia No 14/2005 concerning school teachers and university lecturers explains that "certification is the process of granting educational certificate to both school teachers and university lecturers as formal evidence and recognition for them as professional staff" (Alwi, 2008). Additionally, the quality of education significantly plays a very important role because it is part of the main independent variables in an attempt to build human resources and national competitiveness. Subsequently, the quality of education is also determined by educational resources. Law of the Republic of Indonesia No. 20/2003 Article 1 (23) explains, "Educational resources are anything employed in performing education, consisting of educational forces, society, funding, and infrastructures. In addition, the Law of the Republic of Indonesia No. 20/2003 Article 1 (23) explains, as previously mentioned, teachers as educational forces in the context of educational resources seem to play the most important role. Muslich (2007) argued that "Teachers play a very strategic part in the educational process. Adequacy of other resources is often meaningless without adequacy of teachers' quality". Moreover, Usman (2013) stated that "teacher is one of the determining factors for success in any attempt of education. That is why any innovation in education, curriculum design, and enhancement of human resources generated from educational attempts always flow from the teacher. Similarly, Kunandar and Si (2010) indicated that "teacher is one of the factors determining the quality of education. This is because; the teacher is at the forefront who creates the quality of human resources. He or she also becomes a spearhead standing at the forefront to realize the vision and mission of education. Furthermore, Fullan (2006) stated that "educational change depends on what teachers do and think".

1.1. Research problem

A study by DNE (2008) indicated that most of the teachers in Indonesia showed satisfactory performance in various aspects of teachers' competencies. This situation can be seen from the report of Primary School Supervisors of Bureau Country, East Kalimantan Province, Indonesia, in 2013. The report revealed that teachers' competencies in various aspects such as learning devices preparation gained up to 72% while learning organization improved to 68%, learning implementation rose to 73%, learning assessment spiked to 70%, 69% in the use of technology, and

learning evaluation improved to 67%. The lowest competence among teachers in the report is in learning evaluation and the highest is in learning implementation. This finding is significant due to the relationship between learning implementation and evaluation in the learning process. In the context of school leadership, schoolteachers' performance is strongly influenced by the school principal leadership styles. In line with this, Nahavandi (2002) stated that "an effective leader influences his followers in a desired manner to achieve desired goals. Thus, different leadership styles may affect organizational effectiveness or performance". Furthermore, Assunta (2007) measured the leadership effectiveness and leadership role and its influence on performance, leadership behaviors, and attitudes. In other words, the statements indicate that the principal leadership styles become the factors that may affect the teachers' performance. Two school principal leadership styles were administered in this research i.e., authoritarian and democratic leadership styles. One of the aims of the study is to investigate which leadership style stimulates performance.

2. Literature review

2.1. Authoritarian leadership and democratic leadership

The authoritarian leadership is a leadership style that applies a powerful approach in the context of one's status in an organization to make decisions and develop its structure so that the power becomes the most dominant force in the organization. Authoritarian leaders are generally the ones who work hard and strictly work according to regulations. They are also earnest in activities and firm in decisions, careful, and order. In short, their instructions must be obeyed as well. Based on the previous studies, it can be concluded that the authoritarian leadership style is intended to influence the people to achieve the goals of the school using the power and centralization of authority. The authoritarian leaders are inclined to influence others in the following areas; delegation of tasks and authority, involve in problem-solving, giving attention to subordinates, organization policy and decision making, organization planning, implementation of organization tasks and law enforcement in organizational life, appreciation for subordinates' opinions and ideas, exhibiting professional personality and integrity, evaluating the organization, giving constructive criticism, rewards and punishment for subordinates.

According to Lewin (1950), a democratic leadership style is a leader's style that considers himself as a part of the group and tries together to be responsible for the implementation of his objectives. Furthermore, democratic leaders tend to involve their employees in making a decision, delegating authority, encouraging employees' participation in determining work methods and objectives, and

feedback as a mean of improving the employees. A democratic leader tries to bring his subordinates to the goals and ideals by treating them equal. According to Lewin (1950), a democratic leadership style respects the employees' ability and distributes knowledge and creativity to improve services, expand businesses, and generate a lot of profits which can be a motivation for employees. In other research findings shows that there are no significant bivariate relationships were identified between certain pairs such as collegial leadership and teachers commitment ($r= 0.033$, p value= 0.710), institutional vulnerability and teachers commitment ($r= -0.135$, p -value= 0.124), professional teacher behaviour and teachers commitment ($r= 0.078$, p -value= 0.378). All the correlation is significant if $p < 0.05$) (Othman and Kasuma, 2017).

Based on the various statements above, it is clearly understood that the school principal's democratic leadership style is a behavior used to influence the people to achieve goals in the school by involving them with the following indicators: Delegating tasks and authority, solving problems, paying attention to subordinates, making decision and policy, planning and implementing tasks of the school and enforcing rules in school, appreciating opinions and ideas of the subordinates, building personality, conducting the evaluation of the school, and providing criticism, reward and punishment to subordinates.

2.2. Teacher certification

Certification referring to the National Commission on Educational Services (NCES) states that "certification is a procedure that evaluates teachers and reviews the candidates' credentials and provides them or her a license to teach". Therefore, teacher certification is a procedure to determine whether a prospective teacher deserves to have permission and authority to teach. Teacher certification is a process of competency test for prospective teachers or teachers who wish to acquire the recognition or improve competence in accordance with the chosen profession. According to Law No. 14 of 2005, certification is the process of granting educator certificates to teachers and lecturers. Furthermore, certification is the process of awarding recognition to a qualified individual who has competences to carry out educational services in an educational unit after going through a rigorous qualification process that involves competency tests conducted by the certification body.

In addition, teacher certification is a process of granting certificates to the teachers who have already met the requirements. Teacher certification is intended to determine the expediency of the teachers in implementing their duties as professional teachers; enhance the learning process and results; improve the welfare of the teachers; and improve the dignity of the teachers for upgrading the quality of the national education. By referring to the descriptions above, it can be concluded that teacher

certification is about granting recognition in the form of educator certificate to the teachers who already possessed competences in giving services in the field of education in a specific educational unit and within a course. Operationally, this research is intended to determine the differences of performances in the following contexts; certified and uncertified teachers; the teachers with authoritarian leadership style and those with democratic one; the certified and uncertified teachers of authoritarian leadership style; the certified and uncertified teachers of democratic leadership style; and the effect of interaction between the leadership style with teachers certification and the teachers' performance.

3. Research methodology

The research was conducted at the State Elementary School at Berau District in East Kalimantan Province, Indonesia. Only 23 out of 151 elementary schools purposely choose and met the criteria for the samples of the research. The sample consisted of 10 schools with a democratic leadership style and 13 schools with authoritarian style and 160 certified and uncertified teachers. The data were collected using a set of questionnaires and analyzed with two-way analysis of variance (ANOVA). It was computed by using a quantitative approach of a comparative method (ex post facto) with 2 x 2 factorial designs. Independent variables of this research were identified as teacher certification (A) consisting of the certified teachers (A1) and the uncertified teachers (A2). Moreover, leadership style (B) is the second variable consisting of the authoritarian leadership style (B1) and democratic style (B2), while the teachers' performance becomes a dependent variable (Y). Before hypotheses testing, descriptive analysis was conducted to see the means of each variable. The data normality test was conducted using a significant Kolmogorov-Smirnov formula (sig-counted). The homogeneity test was analyzed by using ANOVA when $\alpha \geq \text{sig}$. Then, the inferential analysis to test the hypothesis was conducted by using two-way ANOVA at significance level $\alpha = 0.05$ (5%) to test the effects of leadership styles and teachers' certification and the effect of interaction factors upon the teachers' performance. Hypothesis testing is then conducted by using a t -test to see the differences between the average parameters of the teachers' performance for all groups of the teachers set up by teacher certification factors (A) and factors of the school principal's leadership style (B) as the influencing factor providing significant interactions.

4. Findings and discussion

All variables were distributed normally after the requirements of normality and homogeneity were tested. The results of data analysis will determine either this study reject or fail to reject the null hypothesis.

The first Hypothesis: There is no difference between the performance of certified and uncertified

teachers. The results of statistical calculations can be found in [Table 1](#).

Table 1: The result of two-way ANOVA on certification and leadership styles to teachers' performances

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	2721.869(a)	3	907.290	13.454	0.000
Intercept	3295621.056	1	3295621.056	48870.078	0.000
Certified_Teachers_A	551.306	1	551.306	8.175	0.005
Leadership_Styles_B	327.756	1	327.756	4.860	0.029
Teacher_Certification_A* Leadership_Styles_B	1842.806	1	1842.806	27.327	0.000
Error	10520.075	156	67.436		
Total	3308863.000	160			
Corrected Total	13241.944	159			

R Squared= 0.193 (Adjusted R Squared= 0.177)

[Table 1](#) shows that the value of the $F_{\text{counted}}=8.175$ is greater than the $F_{\text{table}}=3.964$ ($8.175 > 3.964$) with significance value= $0.005 < \alpha = 0.05$. [Table 1](#) has also shown that H_0 is rejected and H_1 is accepted. This indicates that there is a significant difference between the leadership styles of the certified teachers (A1) and uncertified ones (A2). It also shows that the $F_{\text{counted}}=4.860$ is higher than the $F_{\text{table}}=3.964$ ($4.860 > 3.964$) with the significance value= $0.029 < \alpha = 0.05$. This indicates that H_0 is rejected and H_1 is accepted. It also shows that there is a difference between the performance of teachers of the authoritarian leadership style (B1) and that of the democratic one (B2). [Table 1](#) also shows that certification and leadership styles have influenced the teachers' performance at 17.7%. It means that teachers' performance is affected by other factors at 82.3%.

The second hypothesis: There is no interaction effect of leadership styles and the teacher certification toward the teachers' performance. [Table 1](#) shows the value of $F_{\text{counted}}=27.327$ is greater than the $F_{\text{table}}=2.668$ ($27.327 > 2.668$) with the significance value of $0.000 < \alpha = 0.05$. This indicates that there is an interaction effect between teacher certification and indicates the school

principal's leadership styles towards the teachers' performance. It also indicates that H_0 is rejected and H_1 is accepted. In order to find out whether the interaction effect between the teacher certification and the leadership styles towards the teachers' performance is significant, a simple hypothesis testing using a *t-test* with the significance level $\alpha = 0.05$ is also conducted. This interaction effect covers; 1) the certified and uncertified teachers of the authoritarian leadership style; 2) the certified and uncertified teachers of democratic leadership style; 3) the certified teachers of both the authoritarian and democratic leadership styles, and; 4) the uncertified teachers of both the authoritarian and democratic leadership styles.

The third hypothesis: There is no significant difference between the performance of the certified and uncertified teachers of the authoritarian leadership style.

[Table 2](#) shows the value of $t_{\text{counted}}=2.38$ is greater than $t_{\text{table}}=1.99$ ($2.38 > 1.99$) with significance value $0.022 < \alpha = 0.05$. This indicates that there is a significant difference in performance between the certified and uncertified teachers of the authoritarian leadership style.

Table 2: The result of the analysis of the teachers' competence and leadership styles of the four data group using *t-test*

	Mean		Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)		
	Paired Differences				Upper					Lower	
	Mean	Std. Deviation			Upper	Lower				Upper	Lower
Pair 1 A1B1 - A2B1	3,11	8,17	1,29	0,46	5,69	2,38	39	0,022			
Pair 2 A1B2 - A2B2	10,50	10,01	1,58	7,30	13,70	6,64	39	0,000			
Pair 3 A1B1 - A1B2	9,65	9,21	1,46	6,71	12,60	6,63	39	0,000			
Pair 4 A2B1 - A2B2	3,93	10,99	1,74	0,41	7,44	2,26	39	0,030			

The fourth hypothesis: There is no significant difference between the performance of the certified and uncertified teachers of the democratic leadership style. By referring to [Table 2](#), it can be seen that $t_{\text{counted}}=6.64$ is greater than $t_{\text{table}}=1.994$ ($6.64 > 1.994$) with a significance level of $0.000 < \alpha = 0.05$. It indicates that there is a significant difference between the performance of certified and uncertified teachers of the democratic leadership style.

The results of this study indicate that the teachers' performance is strongly influenced by the school principals' leadership styles, authoritarian and democratic styles, and teacher certification. In relation to this, [Nahavandi \(2002\)](#) stated that an

effective leader influences followers in a desired manner to achieve the desired goal. This shows that different leadership styles may affect teachers' performance in general while the democratic style influences the performance of the certified teachers only. These findings give what [Assunta \(2007\)](#) measured by covering the leadership effectiveness, leadership role and its influence on performance, leadership behaviors, and attitudes. The findings also strongly support the statement that the principal leadership styles become the factors that may affect the teachers' performance.

Moreover, the research findings also indicate that the performance of the certified teachers is higher than that of the uncertified ones. The research

findings also found that the performance of the certified teachers was better than that of uncertified ones. This study indicated that teacher certification is formal evidence of professionalism and competent teachers in educational services.

Furthermore, the teachers' performance of the democratic leadership style is higher than that of authoritarian one. This finding strengthens the correlation between the democratic school principal leadership style and the counseling teachers' performance was greater than the authoritarian leadership style. The excellence of a democratic leadership style is because of its leader who considers himself a part of the group and is responsible for the goal. He is also willing to listen to and accept suggestions of his subordinates. Moreover, the teacher's performance is significantly influenced by the school environment by supporting the teachers to feel comfortable at work. This comfortable condition at work is created by the open-mindedness of the democratic school leadership style.

It is more important that according to Heneman et al. (1999) the democratic leadership style can promote the sharing of responsibility, the exercise of delegation, and continual consultation. It can also effectively delegate tasks to subordinate and encourage others to become good leaders and involved in leadership and employee development. This explanation is also in line with the statement of Debushis (2000) stated that democratic leadership style provides confidence to employees who will help them for meeting deadlines and departmental goals, to provide efficient team inputs. In short, the democratic principal leadership style can promote a comfortable school atmosphere that enables the improvement of the teachers' performance as shown in the research finding. Rega (2006) also explained that the democratic leadership style improves performance in both short and long terms and can be used for any type of work project.

The effect of the interaction between the teacher certification and the leadership styles towards the teacher's performance is very significant. It is found that; (1) the performance of the certified teachers of the democratic leadership style is high and conversely, the performance of the certified teachers of authoritarian leadership style is low; (2) the performance of the uncertified teachers of the authoritarian leadership style is higher than that of the democratic leadership style, and (3) the performance of the certified teachers of the democratic leadership style is higher than that of the uncertified ones.

The performance of the uncertified teachers of the authoritarian leadership style is higher than that of the certified ones. The uncertified teachers tend to do their tasks and improve their performance because of the instructions and directives of their superiors which indicate that they were not resourceful neither creative. This research finding stated that the authoritarian leadership style may bring about blind obedience of subordinates to their

superiors or principals without any criticism. They must obey their school principals because of their power. While, the low performance of the certified teachers of the authoritarian leadership style is due to the lack of teachers' freedom, despair, and frustration. Furthermore, the performance of the certified teachers is higher than the uncertified ones of the democratic leadership style due to their own awareness of their duties, tasks, and responsibilities without being instructed by their principals. The democratic school principals provide the teachers' opportunities and freedom to create and express ideas for alternative solutions in solving the school problems. Additionally, the school principals also motivate the teachers to work so that their sense of responsibility highly increased.

5. Conclusion

The findings of the research indicate that the performance of certified teachers is higher than the uncertified ones. This research also has found that the performance of the teachers in the school where the principals applied democratic leadership style is higher than that of the authoritarian leadership style. The effect of interaction between teacher certification and the school principal's leadership style on teacher performance is very significant. The performance of the uncertified teachers of the school principals of authoritarian leadership styles is higher than the certified ones. Meanwhile, the performance of the certified teachers of the democratic leadership style is higher than the uncertified ones. To conclude, the teachers' performance is strongly influenced by its competence and leadership style of the organizational leader. The teacher certification program may help the teachers improve their teaching competency. It is also very important for the teachers to practice the democratic leadership style in managing the class during the teaching and learning process as it affects the students' learning atmosphere.

9 Compliance with ethical standards

Conflict of interest

The authors declare that they have no conflict of interest.

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