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## Teacher's Creativity As A Mediator For The Influence Of The School Climate And Instructional Leadership

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**Abstract:** This study aims to test the causality relationship model of school climate, instructional leadership and teacher creativity on learning effectiveness. The method used in this study is a quantitative method with a path analysis approach. Data collection was carried out by distributing questionnaires to 137 public elementary school civil servant teachers in Central Bogor District as the research sample. The results of the study show that 1) the causality relationship between school climate, instructional leadership, and teacher creativity is confirmed on learning effectiveness; 2) there is a positive direct effect of school climate on learning effectiveness with a path coefficient value ( $\beta_{y1} = 0.238$ ); 2) there is a positive direct effect of instructional leadership on learning effectiveness with a path coefficient value ( $\beta_{y2} = 0.322$ ); 3) there is a positive direct effect of teacher creativity on learning effectiveness with a path coefficient value ( $\beta_{y3} = 0.358$ ); 4) there is a positive direct effect of school climate on teacher creativity with a path coefficient value ( $\beta_{31} = 0.395$ ); 5) there is a positive direct effect of instructional leadership on teacher creativity with a path coefficient value ( $\beta_{32} = 0.395$ ); 6) there is a positive indirect effect of school climate on the effectiveness of learning through teacher creativity with a path coefficient ( $\beta_{31}\beta_{y3} = 0.141$ ); 7) there is a positive indirect effect of instructional leadership on learning effectiveness with a path coefficient ( $\beta_{32}\beta_{y3} = 0.192$ ). This research has implications for the higher the school climate, instructional leadership and teacher creativity, the higher the effectiveness of learning.

**Kata Kunci:** School\_Climate, Instructional\_Leadership, Teacher\_Creativity, Learning\_Effectiveness.

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### Introduction

Guiding the learning journey of students in discovering themselves and their potential is a big task in the world of education. In the process of undergoing education, students will be equipped with character skills, critical thinking, creative, citizenship, collaboration, and communication as skill development in accordance with the 21st century (Kemdikbud, 2022). So it is important in the educational process to involve the role of quality teachers in the achievement of students (Sezer & Çakan, 2022). Quality teachers are able to bridge the learning process to achieve the expected goals, this becomes a parameter of learning effectiveness. Learning effectiveness is an important component of the success of the learning process (Sumarno et al., 2023).

Effectiveness is a condition for achieving a target or goal both in terms of quality, quantity and time (Hasibuan, 2019). In relation to education, the goal of national education to be

achieved is to educate the life of the nation through the development of character and skills. Thus, learning effectiveness is associated with student learning outcomes comprehensively after completing certain education (Li & Liang, 2020). Learning effectiveness can be used to determine the extent to which students can understand, master and change their knowledge or skills after participating in learning activities (Huang & Zheng, 2022).

Things that need to be considered by the teacher regarding the effectiveness of learning are creating dynamic interactions between students and teachers and providing broad opportunities for students to learn (Sezer & Çakan, 2022). Other strategies that can be carried out in order to achieve learning effectiveness include paying attention to lesson planning, proficiency in using learning media and effective classroom management to encourage students to be active, critical, and motivated to take part in learning. The effectiveness of learning can also be reflected in several aspects, such as learning completeness, learning activities, the teacher's ability to manage learning and supporting facilities and infrastructure (Shahzad & Mehmood, 2019). So that the effectiveness of learning is considered as something important in the learning process.

Looking at the effectiveness of learning, the skill level of Indonesian students is still low. This is reflected in Indonesia's participation in PISA 2018 in order to identify aspects related to the quality of Indonesian learning compared to international standards, ranking 71 out of 77. This measurement is based on three areas of literacy, namely reading, mathematics and science. Indonesia's human resource competitiveness sector on the 2022 Global Talent Competitiveness Index (GTCI) is ranked 82nd out of 133 countries. In the 2021 Human Development Index (HDI), Indonesia is ranked 114th out of 191 countries. In line with this, in the initial survey by distributing questionnaires to public elementary school civil servant teachers in Central Bogor District, the results obtained were 70% of teachers needed to improve lesson planning, 40% of teachers needed to improve interaction with students, 37% of teachers needed to increase the use of learning media, 65% of teachers needed to improve classroom management, and 55% of teachers needed to improve the implementation of evaluation activities.

Research related to the effectiveness of learning has been carried out by many previous researchers. Similar to research conducted by Tang et al., (2022) in the education sector at the university level in China, examining the effect of blended instruction on the effectiveness of student learning. This study shows that the aspects of student engagement such as cognitive, emotional, and behavioral involvement positively and significantly affect the effectiveness of learning. Another study by Chauhan (2017) shows that technology has a moderate effect on learning effectiveness. In addition, research conducted on 155 civil servant teachers at Sukabumi High School conducted by Wulandari & Suhardi (2020) showed the result that increasing learning effectiveness is influenced by the school climate and teacher's knowledge of the curriculum. Meanwhile Herawati et al., (2021) through his research on 131 permanent foundation teachers at Bogor City High School found a positive and significant relationship between academic supervision and work discipline on learning effectiveness. In contrast to previous research, this study will investigate further how the influence of school climate, instructional leadership and teacher creativity on increasing learning effectiveness. Thus, this research can become a new scientific reference in exploring the modeling of causal relationships related to the influence of school climate, instructional leadership and teacher creativity and learning effectiveness, as well as new knowledge on efforts to increase learning effectiveness by strengthening these variables. Therefore, the purpose of this study was to test

the causality relationship model and find out the direct and indirect effects of the variables that became the research topic.

## Method

This study uses a quantitative method that focuses on the causal relationship between school climate and instructional leadership as the independent variable, teacher creativity as the intervening variable and learning effectiveness as the dependent variable. This study involved 208 public elementary school civil servants (PNS) teachers in Central Bogor District, who were spread across 34 schools as the study population. The number of research samples was determined through proportional random sampling technique and the Slovin formula. As a result, a total of 137 teachers were selected as the sample for this study.

Data collection was carried out by distributing questionnaires on the indicators for each variable studied. The measurement scale used is a rating scale with five alternative answers, namely always, often, sometimes, never, and never. Before being used in research, the instrument was first tested on 30 respondents, with the number of instrument statement items totaling 40 items for each variable. The aim is to determine the validity and reliability using the Pearson product moment and Cronbach's Alpha with the condition  $\geq 0.7$ . The results obtained, the learning effectiveness variable obtained the number of valid items 38 items with a reliability of 0.952; the school climate variable obtains a valid number of 35 items with a reliability of 0.911; the instructional leadership variable obtains a valid number of 36 items with a reliability of 0.939; and the teacher's creativity variable obtained a valid number of 35 items with a reliability of 0.943.

Instruments that are valid and reliable, then distributed to the research sample. The collected research data were analyzed using descriptive analysis and inferential analysis. Descriptive analysis was carried out to see the description of the research variables. Inferential analysis begins with prerequisite analysis tests in the form of standard error normality tests, variance homogeneity tests, and linearity tests, followed by hypothesis testing using Path Analysis with the help of IBM SPSS Ver 26 for Windows. The research constellation model is shown in Figure 1:

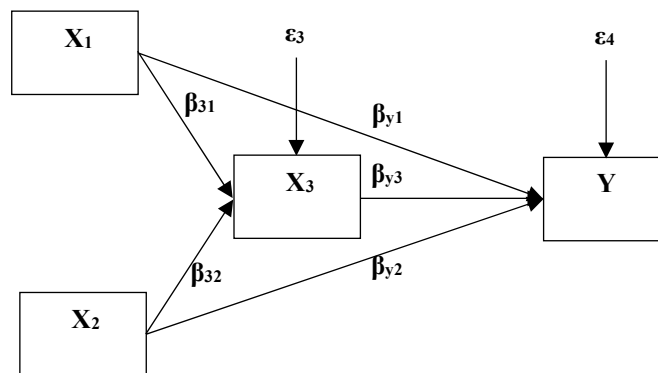


Figure 1. Constellation Analysis

## Information:

- X<sub>1</sub> = School Climate  
 X<sub>2</sub> = Instructional Leadership  
 X<sub>3</sub> = Teacher Creativity  
 Y = Learning effectiveness

**Results and Discussion**

Testing the prerequisite analysis in the form of a normality test using the Kolmogorov-Smirnov Test. The data is said to be normally distributed if the Asymp. Sig (2-tailed) >  $\alpha$ . Overall the data in this study were found to be normally distributed, this can be seen in table 2 below

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**Table 1. Normality Test Resultss**

No	Estimate Error	N	Sig.	$\alpha$	Conclusion
1	X <sub>1</sub> - Y	137	0.060	0.05	Normal distribution
2	X <sub>2</sub> - Y	137	0.015	0.01	Normal distribution
3	X <sub>3</sub> - Y	137	0.200	0.05	Normal distribution
4	X <sub>1</sub> - X <sub>3</sub>	137	0.088	0.05	Normal distribution
5	X <sub>2</sub> - X <sub>3</sub>	137	0.068	0.05	Normal distribution

Based on the results of the normality test, it is known that the Asymp. Sig (2-tailed) >  $\alpha$ . In the X<sub>1</sub>-Y estimation error, it is obtained 0.065 > 0.05; X<sub>2</sub>-Y obtained 0.015 > 0.05; X<sub>3</sub>-Y obtained 0.200 > 0.05; X<sub>1</sub>-X<sub>3</sub> obtained 0.088 > 0.05; and X<sub>2</sub>-X<sub>3</sub> obtained 0.068 > 0.05. Thus it is known that the data is normally distributed.

In the results of the homogeneity test using the Bartlett test, the results are as shown in table 3 below:

**Table 2. Homogeneity Test Results**

No	Variable	Sig.	$\alpha$	Conclusion
1	X <sub>1</sub> - Y	0,437	0,05	Homogeneous
2	X <sub>2</sub> - Y	0,163	0,05	Homogeneous
3	X <sub>3</sub> - Y	0,786	0,05	Homogeneous
4	X <sub>1</sub> - X <sub>3</sub>	0,294	0,05	Homogeneous
5	X <sub>2</sub> - X <sub>3</sub>	0,261	0,05	Homogeneous

The data above shows that the sig. >  $\alpha$ . The X<sub>1</sub>-Y test obtained a value of 0.437 > 0.05; X<sub>2</sub>-Y obtained a value of 0.163 > 0.05; X<sub>3</sub>-Y obtained a value of 0.789 > 0.05; X<sub>1</sub>-X<sub>3</sub> obtained a value of 0.297 > 0.05; and X<sub>2</sub>-X<sub>3</sub> obtained a value of 0.261 > 0.05. So it is known that the data comes from a homogeneous population.

Testing the prerequisites for further analysis, in the form of a significance and linearity test of the regression coefficient with the provisions that the data is said to be significant if the  $\text{sig.} < \alpha$  and the data is said to be linear if the  $\text{sig.} > \alpha$ . The test results can be seen in table 3 below:

**Table 3. Significance Test and Test**

No	Relationship Models	Regression Equation	Linearity			Significance		
			Sig	$\alpha$	Result	Sig	$\alpha$	Result
1	X <sub>1</sub> - Y	$\hat{Y}=40.074+0.745X_1$	0.947	0.05	Linear	0.000	0.05	Significance
2	X <sub>2</sub> - Y	$\hat{Y}=10.227+0.927X_2$	0.054	0.05	Linear	0.000	0.05	Significance
3	X <sub>3</sub> - Y	$\hat{Y}=25.111+0.852X_3$	0.741	0.05	Linear	0.000	0.05	Significance
4	X <sub>1</sub> - X <sub>3</sub>	$X_3=32.878+0.759X_1$	0.603	0.05	Linear	0.000	0.05	Significance
5	X <sub>2</sub> - X <sub>3</sub>	$X_3=2.384+0.945X_2$	0.110	0.05	Linear	0.000	0.05	Significance

The results show that the X<sub>1</sub>-Y relationship model with the regression equation  $\hat{Y}=40.074+0.745X_1$ ; X<sub>2</sub>-Y with the regression equation  $\hat{Y}=10.227+0.927X_2$ ; X<sub>3</sub>-Y with the regression equation  $\hat{Y}=25.111+0.852X_3$ ; X<sub>1</sub>-X<sub>3</sub> with the regression equation  $X_3=32.878+0.759X_1$ ; and X<sub>2</sub> - X<sub>3</sub> with the regression equation  $X_3 = 2.384 + 0.945X_2$  shows a positive and significant effect.

Causality model analysis was carried out by path analysis using IBM SPSS Ver 26 for Windows. The analysis was performed on two substructures. The first substructure states the causal relationship X<sub>1</sub>, X<sub>2</sub>, and X<sub>3</sub> to Y. The second substructure states the causal relationship X<sub>1</sub> and X<sub>2</sub> to X<sub>3</sub>. The magnitude of the relationship value is seen in the value of the coefficient of determination. Significance seen from the sig value.  $< \alpha$  (0.05). The magnitude of the path coefficient value is denoted by  $\beta$  as seen in Standardized Coefficients Beta and the residual coefficient value is obtained by calculating  $\varepsilon = 1 - r^2$ . The results of the analysis of the substructural model-1 are shown in table 4:

**Table 4. Analysis of the Substructural Model-1**

No	Model	R Square	Sig.	Standardized Coefficients Beta
1	X <sub>1</sub>		0.004	0.238
2	X <sub>2</sub>	0.753	0.000	0.322
3	X <sub>3</sub>		0.000	0.358

Variabel bebas: Y

The results of the analysis of the substructure-1 model obtained the value of the relationship between variables X1, X2, X3 to Y is 0.753. This shows that the effect of X1, X2, X3 on Y is 75.3% with a residual value ( $\epsilon_4$ ) =  $1 - r^2 = 1 - 0.753 = 0.247$ . It is also known that variable X1 has a sig value = 0.004 < 0.05 which is statistically significant. Variable X2 has a sig value = 0.000 < 0.05 which is statistically significant. Variable X3 has a sig value = 0.000 < 0.05 which is statistically significant. The coefficient of the X1-Y path is  $\beta_{y1} = 0.238$ ; X2-Y ie  $\beta_{y2} = 0.322$ ; and X3-Y namely  $\beta_{y3} = 0.358$ . So the path analysis model on substructure-1 is  $\hat{Y} = 0.238X_1 + 0.322X_2 + 0.358X_3 + 0.247$ . The results of the substructure-2 model are listed in table 5:

Table 5. Analysis of the Substructural Model-2

No	Model	R Square	Sig.	Standardized Coefficients Beta
1	X <sub>1</sub>	0.790	0.000	0.395
2	X <sub>2</sub>		0.000	0.539

Independent variable: X<sub>3</sub>

The results of the analysis of the substructure-2 model obtained the value of the relationship between variables X1 and X2 to X3 is 0.790. This shows that the effect of X1 and X2 on X3 is 79.0% with a residual value ( $\epsilon_3$ ) =  $1 - r^2 = 1 - 0.790 = 0.21$ . It is also known that variable X1 has a sig value = 0.000 < 0.05 which is statistically significant. Variable X2 has a sig value = 0.000 < 0.05 which is statistically significant. The path coefficient X1-X3 is  $\beta_{31} = 0.395$ ; X2-X3 ie  $\beta_{32} = 0.539$ . So the path analysis model on substructure-2 is  $X_3 = 0.395X_1 + 0.539X_2 + 0.21$ .

Furthermore, hypothesis testing is carried out by testing the path model to examine the causal relationship between the independent variables and the dependent variable either directly or indirectly. Hypothesis testing was assisted by IBM SPSS Ver 26 for Windows to see the magnitude of the path coefficient value at a significance level of 0.05. The hypothesis is accepted if the research hypothesis ( $H_1$ ) > 0. The significance of the direct effect is known from the sig. < 0.05 and t count > t table  $\rightarrow$  while the indirect effect is known from the Sobel test results. The results of the hypothesis are shown in table 6:

Table 6. Hypothesis Testing

No	Relationship Models	Path Coefficient ( $\beta$ )	Significance		
			t	Sig	Sobel test
1	X <sub>1</sub> - Y	0.238	2.893	0.04	-
2	X <sub>2</sub> - Y	0.322	3.606	0.000	-
3	X <sub>3</sub> - Y	0.358	3.803	0.000	-
4	X <sub>1</sub> - X <sub>3</sub>	0.395	5.843	0.000	-
5	X <sub>2</sub> - X <sub>3</sub>	0.539	7.975	0.000	-
6	X <sub>1</sub> - X <sub>3</sub> - Y	0.141	-	-	0.001

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7	X <sub>2</sub> - X <sub>3</sub> - Y	0.192	-	-	0.000
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Based on the data obtained, the direct effect of X<sub>1</sub>-Y shows the path coefficient  $\beta_{y1} = 0.238$ , a significance value of  $0.004 < 0.05$  and  $t_{count} = 2.893 > t_{table} = 1.9779$  ( $dk = 133; \alpha = 0.05$ ) which means that X<sub>1</sub> has a direct positive and significant effect on Y. So H<sub>1</sub> is accepted. This finding is in line with previous research conducted by Taqillah et al., (2022) which showed that there is a positive and significant relationship between school climate and learning effectiveness. The direct effect of X<sub>2</sub>-Y path coefficient  $\beta_{y2}$  is 0.322, a significance value of  $0.000 < 0.05$  and  $t_{count} = 3.606 > t_{table} = 1.9779$  ( $dk = 133; \alpha = 0.05$ ) which means that X<sub>2</sub> has a direct positive and significant effect on Y. Thus, H<sub>1</sub> is accepted. This finding is similar to that expressed by Dwiyono et al., (2022) which shows the role of the head's instructional leadership through various strategies can increase the effectiveness of learning.

The direct effect of X<sub>3</sub>-Y shows a path coefficient of  $\beta_{y3}$  of 0.358, a significance value of  $0.000 < 0.05$  and  $t_{count} = 3.803$  with  $t_{table} = 1.9779$  ( $dk = 133; \alpha = 0.05$ ). So that H<sub>1</sub> is accepted. This finding is in line with previous research conducted by Suryanti & Arifani, (2021) showing a significant relationship between teacher creativity and learning effectiveness. The direct effect of X<sub>1</sub>-X<sub>3</sub> shows the  $\beta_{31}$  path coefficient of 0.395, a significance value of  $0.000 < 0.05$  and  $t_{count} = 5.843 > t_{table} = 1.9778$  ( $dk = 134; \alpha = 0.05$ ), then H<sub>1</sub> is accepted. This finding is similar to research conducted by Fadloli & Soemantri (2021) which shows that there is a significant influence between organizational climate and teacher creativity. The direct effect of X<sub>2</sub>-X<sub>3</sub> shows the  $\beta_{32}$  path coefficient of 0.539, a significance value of  $0.000 < 0.05$  and  $t_{count} = 7.975 > t_{table} = 1.9778$  ( $dk = 134; \alpha = 0.05$ ), then H<sub>1</sub> is accepted. Research that is similar to these findings is Amiruddin et al., (2018) showing the role of the school principal as an educator can increase teacher creativity.

Meanwhile, the indirect effect of X<sub>1</sub>-X<sub>3</sub>-Y showed a  $\beta_{31} \beta_{y3}$  path coefficient of 0.141; the total effect is 0.379 and based on the Sobel test it is known that the significance value is  $0.001 < 0.05$ . Teacher creativity in the learning process can increase student learning motivation so that learning takes place actively. Creativity in teachers can create a sense in a teacher to maximize learning facilities, choose the right method and the right evaluation, so as to increase the effectiveness of learning (Julia & Hainun, 2022). A good school climate has an impact on the creativity of teachers in carrying out their duties and obligations. So that teacher creativity can contribute to mediating school climate with learning effectiveness.

The indirect effect of X<sub>2</sub>-X<sub>3</sub>-Y shows the  $\beta_{32} \beta_{y3}$  pathway coefficient of 0.192; the total effect is 0.514 and based on the Sobel test it is known that the significance value is  $0.000 < 0.05$ . Teacher creativity can facilitate students' self-understanding, learning that is packaged in a variety of ways helps the delivery of learning to be easier. Teacher creativity can be influenced by the leadership of the school principal. Good school principal leadership will increase teacher creativity (Rezeki et al., 2021). So that teacher creativity can contribute to mediating instructional leadership with learning effectiveness.



### Conclusion

In this study, the direct and indirect effects of school climate, instructional leadership, teacher creativity, and learning effectiveness variables were studied. The results of the study show, first, a confirmed causal relationship between school climate, instructional leadership, and teacher creativity on learning effectiveness. Second, school climate has a positive direct effect on learning effectiveness. Third, instructional leadership has a positive direct effect on learning effectiveness. Fourth, teacher creativity has a positive direct effect on learning effectiveness. Fifth, school climate has a positive direct effect on teacher creativity. Sixth, instructional leadership has a positive direct effect on teacher creativity. Seventh, school climate has a positive indirect effect on the effectiveness of learning through teacher creativity. Eighth, instructional leadership has a positive indirect effect on the effectiveness of learning through teacher creativity.

Through the findings in this study, the topic of increasing learning effectiveness is highly recommended. So that the topic regarding the effectiveness of learning should continue to be considered and studied by practitioners or researchers in the field of education. Several efforts as a solution to increase the effectiveness of learning through the school climate include collaboration between school principals, teachers, and other school communities to create a conducive school climate. Awareness of the importance of school climate also needs to be increased through internal programs or external programs in collaboration with related parties that can support learning effectiveness. Efforts as a solutive measure to increase learning effectiveness through instructional leadership are to improve existing programs in the form of professional training and development for school principals to broaden knowledge and skills in leading a learning process, as well as to increase supervision activities and evaluate the role of school principals as instructional leadership. Efforts as a solutive action to increase the effectiveness of learning through teacher creativity are motivating, facilitating and opening up space for teachers to develop and implement creative ideas.

Research that has studied increasing the effectiveness of learning can be developed with a deeper study of the variables that can increase the effectiveness of learning. In addition, it is necessary to conduct an assessment in reviewing the extent to which previous studies can contribute applicable solutions to efforts to increase learning effectiveness.

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