

The Effect of Innovation Climate and Collaborative Learning on the Performance of Elementary School Teachers in Kelapa Dua District, Tangerang Regency

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Abstract	Article Info
<p>This study investigates the influence of training and professional competence on the quality of learning, while examining the mediating role of work culture among teachers in Madrasah Aliyah (MA) in the Walantaka sub-district. An explanatory quantitative research design was employed, using a closed-ended questionnaire administered to 71 respondents selected through a total sampling technique. Data were analyzed using path analysis with SPSS 26 to evaluate the direct and indirect effects of the variables. The findings reveal that training has a significant positive direct effect on learning quality (path coefficient = 0.261, $p = 0.022$, $t = 4.730$). Professional competence also demonstrates a significant direct effect (path coefficient = 0.208, $p = 0.046$, $t = 3.656$). Furthermore, work culture significantly enhances the quality of teacher learning (path coefficient = 0.342, $p = 0.003$, $t = 5.404$). Training indirectly influences learning quality through work culture, as confirmed by a Sobel t-value of 2.484, while professional competence does not exhibit a significant indirect effect (Sobel $t = 1.392$). Collectively, training, professional competence, and work culture account for 49.9% of the variance in work behavior, with the remaining 50.1% explained by other factors not included in this study. This research contributes to the literature on teacher professional development by demonstrating the critical role of work culture as a mediating factor that strengthens the impact of training on learning quality. The findings provide practical implications for educational policymakers and school leaders in designing training programs and fostering positive organizational cultures to enhance teacher performance and learning outcomes.</p>	<p>Article History <i>Received :</i> May 16, 2025 <i>Revised :</i> August 20, 2025 <i>Accepted :</i> October 19, 2025</p> <p>Keywords: <i>Innovation Climate, Collaborative Learning, School Teacher</i></p>

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INTRODUCTION

In the era of rapid globalization and digital transformation, the world of education is required to continue to adapt and develop in order to be able to produce superior, creative, and globally competitive human resources. Teachers as the spearhead of education have a strategic role in ensuring the quality of the learning process in educational units, especially at the elementary school (SD) level. Teacher performance that reflects professional abilities in designing, implementing, and evaluating learning is an important indicator in assessing the success of education at the unit level (Santrock, 2007:72). In the world of modern education, improving the quality of learning is a top priority in efforts to create an education system that is adaptive, innovative, and relevant to the development of the times. One important factor that supports the achievement of these goals is the creation of a school organizational environment

that is able to encourage innovation, cooperation between teachers, and continuous improvement of teacher performance. One important factor that influences teacher performance is the school's innovation climate, which is able to create a work atmosphere that supports creativity, experimentation, and renewal in learning practices (Suharsaputra, 2013:145). The climate of innovation not only reflects the school's openness to new ideas, but also demands synergy between the principal, teachers, and education personnel in developing a learning environment that is relevant and adaptive to changing times (Hapsari & Suparno, 2022).

Teacher performance is a crucial element in determining the effectiveness of the learning process. Sudjana (2011: 45) defines teacher performance as the result of work in carrying out their duties including planning, implementing, and evaluating learning. Meanwhile, Mulyasa (2013: 87) expands the meaning of teacher performance by including aspects of teacher interaction with students and the ability to create a conducive learning atmosphere. Hasibuan (2016: 102) states that factors that influence teacher performance include professional competence, work motivation, and school environmental support. With optimal performance, teachers can be more effective in implementing the curriculum, delivering learning materials, and creating a classroom climate that supports student success.

In Kelapa Dua District, Tangerang Regency, the challenge of improving the performance of elementary school teachers is still an issue that requires special attention. Based on data from the Tangerang Regency Education Office (2023), the average achievement of teacher performance in this area is still below the national standard. This is thought to be related to the low implementation of an innovation climate and less than optimal collaboration between teachers in the learning process. An innovation climate is an important aspect in supporting the formation of a work environment that encourages the emergence of new ideas and more relevant learning practices. Moolenaar et al. (2010: 382-384) defines an innovation climate as the collective perception of organizational members towards practices, procedures, and behaviors that facilitate knowledge and innovation in the organization.

In the context of education, a climate of innovation describes a work atmosphere that encourages openness to new ideas, collaboration between individuals, and the courage to take risks in order to improve the quality of learning (Jiang et al., 2023: 142-144). Hidayati (2017: 104-106) emphasized that in the Indonesian educational environment, a climate of innovation includes openness to change, a shared commitment to innovation, and the active participation of all stakeholders in adopting more effective learning approaches. Indicators that represent a climate of innovation include open communication, organizational support, supportive leadership, and a risk-tolerant environment (Widodo, 2022; Wijayanto, 2021; Setiawan & Yulianto, 2020). In addition, collaborative learning is also a significant factor that supports improving teacher performance. Through a culture of collaboration between teachers, there is an exchange of knowledge, experience, and innovative ideas that can enrich pedagogical insights and strengthen the quality of learning (Suyanto & Jihad, 2013:89; Nugroho & Retnawati, 2021). Collaborative practices also encourage professional reflection and the creation of sustainable learning communities.

Suyanto (2013: 45) states that collaborative learning is a process of collaboration between teachers in designing, implementing, and evaluating learning with the aim of improving the quality of learning. This definition is in line with Herlina (2015: 102) who emphasizes the importance of exchanging experiences and ideas in teacher collaboration to create a more effective learning process. Rahmawati (2019: 55) even added that collaborative learning plays a role in strengthening teacher professionalism because each stage is carried out together and supports each other. In its implementation, collaborative learning involves indicators such as active teacher involvement, quality of communication, joint reflection, and adaptation to student needs (Priyono, 2017; Santoso, 2020; Arifin, 2016).

Recent research by Al Ersozlu et al. (2022) confirms that leadership that encourages collaboration and the use of technology can strengthen the innovative climate of schools. In addition, Tajpour et al. (2023) stated that external readiness such as funding, technology, and

social support are important elements in building a conducive climate for innovation. In the Indonesian context, several recent studies support the effectiveness of collaborative approaches. Research by Via Yustitia et al. (2024) showed that collaborative practice-based training successfully improved teachers' abilities in compiling differentiated assessments and building a culture of collaboration in schools. Meanwhile, Munthe (2024) found that collaboration between Islamic Religious Education teachers had a positive impact on the quality of learning designs, while Rafiudin et al. (2024) noted that collaborative learning based on lesson study contributed significantly to improving the learning outcomes of Elementary School students in Natural Science (IPA).

However, conditions in the field show that the performance of elementary school teachers in Kelapa Dua District, Tangerang Regency is still low. Data on the achievement of educational report cards in 2024 showed a decline in the quality of learning compared to the previous year, although the classroom atmosphere and psychological support from teachers for students began to improve. This decline is strongly suspected to be related to the suboptimal implementation of innovation and low collaboration between teachers. Other challenges that also influence are the lack of teacher confidence in using technology, minimal stakeholder support, and limited relevant training (Interview, M. Ridwan, November 1, 2024).

The low involvement of teachers in implementing school innovation reflects obstacles in terms of both motivation and readiness. Although technology-based programs and new learning methods have been initiated, the lack of enthusiasm indicates that many teachers feel unconfident or reluctant to leave their comfort zones. Fear of new things, especially in the use of technology, is one of the main factors that hinders the successful implementation of this innovation. On the other hand, the Principal of Bencongan I Elementary School stated that: "The low involvement of teachers and stakeholders in school innovation is a major challenge. Teachers often feel less confident with technology, while support from parents and the community is still minimal. This hinders the creation of the synergy needed to run innovative programs effectively" (Interview, Muiz, November 4, 2024).

The Organizational Climate Theory from Litwin and Stringer (1968) is relevant to explain how individual perceptions of the work environment, in this case the school innovation climate, can influence motivation, attitudes, and performance. This theory emphasizes that dimensions such as support, structure, responsibility, and recognition are the main drivers of innovative behavior in organizations, including schools. In addition, Vygotsky's (1978) Social Constructivism approach provides a strong theoretical framework in explaining the importance of collaborative learning. Vygotsky emphasized that the learning process is optimally formed through social interaction, where teachers and students construct knowledge together in a meaningful context. In the context of teacher performance, collaboration between teachers becomes a means to guide each other, reflect, and improve professional competence collectively.

The creation of a climate of innovation and collaborative learning practices depends not only on school policies, but also on the perception and active involvement of teachers in forming a work culture that supports change. Therefore, it is important to see these two variables as strategic factors that are interrelated in supporting the continuous improvement of teacher performance.

Several previous studies have shown that innovation climate and collaborative learning have an impact on improving teacher quality, but there are still limitations in terms of approach and context. Hapsari and Suparno (2022:114) emphasized that an innovative climate encourages teacher motivation in designing learning strategies, but is limited to junior high school level. Nugroho and Retnawati (2021:89) found that collaborative learning improves teacher learning reflection, but did not measure its impact directly on performance. Widodo (2022:74) showed that leadership support for an innovation climate plays an important role in improving teacher performance, but focused only on private schools in urban areas. Setiawan and Yulianto (2020:66) concluded that teacher collaboration forms a professional learning community, but did not link it to an innovative climate. Meanwhile, Jiang et al. (2023:143) examined the effect of an

innovation climate on the effectiveness of learning abroad, which is not necessarily relevant to the local Indonesian context. Therefore, this study is here to fill the gap by integrating innovation climate and collaborative learning simultaneously in analyzing their influence on the performance of elementary school teachers in Kelapa Dua District, Tangerang Regency.

Previous research has revealed that a climate of innovation and collaborative learning separately have a positive impact on teacher motivation and competence (Rahayu, 2021). However, studies that specifically analyze the combined effect of a climate of innovation and collaborative learning on the performance of elementary school teachers, especially in Kelapa Dua District, are still rare. Therefore, this study aims to fill this gap by analyzing the effect of both variables simultaneously on teacher performance. It is hoped that the results can be strategic input for developing policies and practices to improve the quality of learning at the elementary school level.

METHOD

This study uses a quantitative research type. This study uses an explanatory method. The explanatory research method in quantitative research aims to explain the causal relationship between the variables studied, such as in this study which examines the influence of Innovation Climate (X1) and Collaborative Learning (X2) as independent variables on Teacher Performance (Y) as the dependent variable. This approach is used to test hypotheses based on existing theories and measure the extent to which the relationship between variables can be explained statistically.

The data used are in numerical form, collected through surveys and questionnaires, then analyzed using statistical methods, namely simple linear regression tests and multiple linear regression tests. The research procedure includes identifying independent and dependent variables, developing hypotheses that connect the three variables, collecting data from representative samples, and analyzing data to measure direct and indirect influences between variables.

This research was conducted at SDN Danau Batur, SDN Pakulonan Barat 2, SDN Cihuni 2, SDN Kampung Bambu 3 and SDN Kelapa Dua 2. The research lasted for six months, from early December 2024 to May 2025. The population used in this study were representative public elementary school teachers in each cluster in Kelapa Dua District, Tangerang Regency with a population of 74 teachers. The sample is part of the population that is the source of data in the study, where the population is the entire characteristics possessed by the research subjects. In this study, the sample included all teachers at SDN Danau Batur, SDN Pakulonan Barat 2, SDN Cihuni 2, SDN Kampung Bambu 3 and SDN Kelapa Dua 2 as many as 74 teachers.

RESULT AND DISCUSSION

Based on the results of the data description, it can be seen that all instruments used in this study have passed the validation stage and are declared feasible. This is an important aspect in quantitative research, because the validity of the instrument plays a role in ensuring the accuracy and reliability of the data collected. Thus, the data obtained can be accounted for and is worthy of being used as a basis for analyzing the relationship between the variables studied.

The instruments in this study were designed to measure two independent variables, namely the climate of innovation and collaborative learning, and one dependent variable, namely teacher performance. These three variables have an interrelated relationship in the context of improving the quality of education, especially in the implementation of the Independent Curriculum which requires teachers to be more adaptive, creative, and collaborative. The use of digital questionnaire-based instruments through Google Form facilitates the data collection process efficiently, quickly, and without geographical barriers, so that respondents can fill out the questionnaire flexibly according to their time and availability.

This study involved 74 teachers spread across state elementary schools representing each cluster in the Kelapa Dua District area. This number can be categorized as a representative sample, considering that the teacher population in the district is quite diverse. This diversity is

reflected in various characteristics of respondents, ranging from gender, age, employment status, educational background, educational linearity, to the work unit where they work.

In terms of gender, the majority of respondents were female (62.2%), while males were only 37.8%. This proportion reflects the general trend in the world of basic education in Indonesia, where the teaching profession is mostly filled by women. This is important to note, considering that the approach and teaching style can be influenced by gender aspects, especially in building communication and emotional relationships with students.

Furthermore, in terms of age, the largest age group is 31–40 years (51.7%), followed by the 51–60 age group (37.9%), and the 21–30 age group (10.3%). This age range shows that the majority of respondents are in a productive and professionally mature age. Teachers in the 31–40 age range are generally in the peak phase of productivity, where they have had sufficient teaching experience but still have a high spirit to learn and innovate. This is an important asset in strengthening an innovative and collaborative culture in the school environment.

In terms of employment status, the data shows the diversity of teacher status, namely civil servant teachers, P3K, honorary, and others. The number of civil servant teachers as the largest category reflects the stability of human resources in state schools. However, the presence of non-civil servant teachers also brings its own dynamics. Non-civil servant teachers, such as P3K and honorary, often have their own challenges, both in terms of job security and access to training and competency improvement. This diversity of status can also affect the extent to which teachers can be actively involved in collaborative and innovative processes.

In terms of education, the majority of teachers have a BA background, which is the minimum qualification required in the world of education. Only a small number of teachers have a Masters education, which can be a potential role model in the development of reflective practices and collaborative learning in schools. Teachers with higher educational backgrounds are also usually more open to change and tend to be more active in the professional development process.

Meanwhile, the linearity of education shows that most teachers have education that is in accordance with the subjects they teach. Linearity of education is very important because it will affect the depth of mastery of the material, the right teaching methods, and the effectiveness of the teaching and learning process as a whole. Teachers who are not linear tend to have limitations in understanding basic concepts in certain fields of study, which can ultimately impact the quality of their performance.

The distribution of respondents based on work units illustrates that all school clusters in Kelapa Dua District are represented in this study. This is important to ensure the external validity of the study, namely the extent to which the results of the study can be generalized to a wider population. With representation from each cluster, the data obtained reflects the actual conditions in the field.

Overall, the characteristics of the respondents in this study indicate that teachers in Kelapa Dua District have great potential to develop professionally. This can be the basis for designing teacher development programs that focus on strengthening the climate of innovation and collaborative learning. These two variables are very important in building a school culture that is adaptive to change and able to answer the demands of the times, especially in the context of implementing the Merdeka Curriculum which emphasizes independence, mutual cooperation, and creativity.

These descriptive results provide a strong foundation for further analysis in the form of hypothesis testing. Furthermore, this data will be analyzed inferentially to determine the relationship and influence between innovation climate, collaborative learning, and teacher performance. It is expected that the results of the inferential analysis can provide theoretical and practical contributions to the development of school management, improving the quality of learning, and making educational policies at the elementary education unit level.

Hypothesis Testing Results

Analysis Analysis of the research hypothesis testing was carried out using simple linear regression techniques (Partial), multiple linear regression tests (Simultaneous), t-tests, F-tests and Coefficient of Determination tests. Multiple regression analysis aims to predict the value of the relationship between two or more independent variables and one or more dependent variables. The basis for decision making is based on probability figures. If the probability figure of the analysis results is ≤ 0.05 , then the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted. Meanwhile, the t-test is used to measure the extent to which the significance of the influence of the independent variable on the dependent variable is partial. The t-test is used to measure the extent to which the significance of the influence of the independent variable on the dependent variable is partial. The t-test is carried out by comparing the *thitung* value with the *ttabel* value with a significance level of 5% (0.05). The coefficient of determination essentially measures how far the model's ability to explain the variation of the dependent variable.

Table 1. Results of Hypothesis Test 1

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	33,807	6,055		5,583	,000
	X1	,532	,092	,564	5,793	,000

a. Dependent Variable: KINERJA GURU

(SPSS Data Processing Results 26)

The sig value of the innovation climate (X1) is $0.000 < 0.05$ (α value) meaning that there is a direct influence of the innovation climate on teacher performance. The results of statistical testing obtained $Y = 33.807 + 0.532X1$. Interpretation:

1. The constant value a shows a value of 33.807, meaning that if there is no change in the independent variable (X1 value is 0), then the value of the dependent variable (Y) is 33.807.
2. The regression coefficient value of variable X1 (innovation climate) is 0.532 which is positive, so if the innovation climate increases by 1 value, teacher performance will increase by 0.532.

The results of statistical testing obtained a t value on (X1) against (Y) which is $5.793 > 1.994$, meaning that *thitung* > *ttabel* so it is known that (X1) has a significant direct influence on (Y). then H_0 is rejected or in other words the innovation climate (X1) has a positive effect on teacher performance (Y).

Table 2. Results of the Determination Coefficient Test X1-Y

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,603 ^a	,364	,355	7,47922

a. Predictors: (Constant), IKLIM INOVASI
b. Dependent Variable: KINERJA GURU

(SPSS Data Processing Results 26)

Based on the data from the table above, the calculation results using the product moment formula with the help of SPSS Statistics Version 26 software show that the correlation coefficient between the innovation climate variable and the teacher performance variable is 0.603. The magnitude of this correlation coefficient value is then connected to the quality value interval conversion table as shown in the following table:

Table 3. Results of Relationship Level Interval Conversion

Interval Koefisien	Relationship level
0,000 – 0,199	Very low
0,200 – 0,399	Low

0,400 – 0,599	Medium
0,600 – 0,799	Strong
0,800 – 1,000	Very strong

(SPSS Data Processing Results 26)

Based on the conversion interval data from the table above, the correlation coefficient between the innovation climate variable and teacher performance is 0.603, which is categorized as a "Strong" relationship level.

Table 4. Results of Hypothesis Test 2

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	42,144	6,479		6,504	,000
	X2	,336	,082	,436	4,116	,000

a. Dependent Variable: KINERJA GURU

(SPSS Data Processing Results 26)

The sig value in collaborative learning (X2) is 0.000 < 0.05 (α value) meaning that there is a direct influence of collaborative learning on teacher performance. The results of statistical testing obtained $Y = 42.144 + 0.336X2$. Interpretation:

1. The constant value a shows a value of 42.144, meaning that if there is no change in the independent variable (X2 value is 0), then the value of the dependent variable (Y) is 42.144.
2. The regression coefficient value of variable X2 is 0.336 which is positive, so if collaborative learning increases by 1 value, teacher performance will increase by 0.336.

The results of statistical testing obtained a t value on (X2) against (Y) which is 4.116 > 1.994, meaning that *thitung* > *ttabel* so it is known that collaborative learning has a significant direct influence on teacher performance. then H_0 is rejected or in other words collaborative learning (X2) has a positive effect on teacher performance (Y).

Tabel 5. Hasil Uji Koefisien Determinasi X2-Y

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,701 ^a	,491	,486	7,92659

a. Predictors: (Constant), PEMBELAJARAN KOLABORASI
b. Dependent Variable: KINERJA GURU

(SPSS Data Processing Results 26)

Based on the data from the table above, the calculation results using the product moment formula show that the correlation coefficient between the collaborative learning variable and the teacher performance variable is 0.701. Categorized as a "Strong" relationship level.

Table 6. Results of Hypothesis Test 3

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficient	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	22,823	6,985		3,267	,002

	X1	,443	,093	,470	4,75 5	,000
	X2	,214	,076	,277	2,80 6	,006
a. Dependent Variable: KINERJA GURU						

(SPSS Data Processing Results 26)

The sig value of innovation climate (X1) simultaneously with collaborative learning (X2) is 0.000 and 0.006 < 0.05 (α value) meaning that there is a direct influence of innovation climate and collaborative learning simultaneously on teacher performance. The results of statistical testing obtained $Y = 22.823 + 0.443X1 + 0.214X2$. Interpretation:

1. The constant value a shows a value of 22.823, meaning that if there is no change in the independent variable (X1 and X2 values = 0) then the value of the dependent variable (Y value) is 22.823.
2. The regression coefficient value of variable X1 is 0.443 which is positive, so if the innovation climate increases by 1 value, teacher performance will increase by 0.443.
3. The regression coefficient value of variable X2 is 0.214 which is positive, so if collaborative learning increases by 1 value, teacher performance will increase by 0.214.

Table 7. Results of the Test of the Coefficient of Determination X1 and X2 to Y

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,621 ^a	,386	,369	7,11890
a. Predictors: (Constant), PEMBELAJARAN KOLABORASI, IKLIM INOVASI				
b. Dependent Variable: KINERJA GURU				

(SPSS Data Processing Results 26)

Based on the data from the table above, the calculation results show that the correlation coefficient between the collaborative learning variable and the teacher performance variable is 0.621. Categorized as a "Strong" relationship level. The determination coefficient value is 0.369. This means that the magnitude of the influence of the innovation climate and collaborative learning on teacher performance is 36.9%, while the remaining 63.1% is influenced by other factors not studied by the researcher.

Table 7. F Test of Variables X1 and X2 to Y

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2262,251	2	1131,125	22,319	,000 ^b
	Residual	3598,195	71	50,679		
	Total	5860,446	73			
a. Dependent Variable: KINERJA GURU						
b. Predictors: (Constant), PEMBELAJARAN KOLABORASI, IKLIM INOVASI						

If seen from the table above, the sig value shows 0.00 is smaller than 0.05, so there is an influence. Therefore, it shows that each independent variable has a significant effect on Y. The results of the statistical test obtained the F test value on X1 and X2 against Y, the calculated F value was 22.319 > 2.733, which means that $F_{hitung} > F_{tabel}$, so it means that the innovation climate (X1) and collaborative learning (X2) have a simultaneous influence on teacher performance (Y).

DISCUSSION

The findings of this study confirm and extend prior research by demonstrating the significant role of innovation climate and collaborative learning in shaping teacher performance. Previous studies such as Sumanto (2024) and Prasetyo Utomo (2020) primarily highlighted the effect of school climate on performance with moderate contributions (22.2%–38.3%). Similarly, Widiastuti (2018) emphasized the importance of innovation-supportive structures but did not integrate collaborative learning as a determining factor. While earlier works focused on either school climate or collaboration separately, this study reveals that both innovation climate and collaborative learning simultaneously contribute 38.6% to teacher performance. This provides new empirical evidence that the interaction of these two factors forms a more adaptive and responsive professional culture compared to when examined independently. The results of the study showed that the innovation climate has a strong correlation with teacher performance ($r = 0.603$) and has a significant positive effect ($\beta = 0.532$; $p < 0.05$). A school environment that supports novelty, experimentation, and creativity has been shown to encourage teachers to be more productive and professional. This finding is reinforced by Sumanto's (2024) research which revealed that school climate is significantly related to teacher performance with a contribution of 22.2%, even simultaneously with work motivation it can explain 39.3% of the performance variable. In addition, Prasetyo Utomo (2020) also noted that school climate has a correlation of 0.619 with teacher performance and contributes 38.3%. This is in line with the view of Widiastuti (2018:56) who emphasizes that dimensions of the innovative climate such as support, structure, and freedom to innovate are important foundations in building teacher professional performance. Collaborative learning also showed a significant effect on improving teacher performance ($r = 0.701$; $\beta = 0.336$; $p < 0.05$). Collaboration between teachers in designing, implementing, and evaluating learning has been shown to improve work effectiveness and teaching quality. Fadilah et al. (2019) in their research at SMP 34 Medan found that a collaborative-based educational supervision approach improved various aspects of teacher performance, from planning, implementing, to assessing learning. This shows that reflective and participatory professional interaction is one of the keys to sustainable teacher quality development. The results of the multiple regression analysis in this study indicate that the climate of innovation and collaborative learning contribute together by 38.6% to improving teacher performance ($R^2 = 0.386$; $F = 22.319$; $p < 0.05$). This finding is in line with the results of the study by Waluya et al. (2021) which emphasized that the innovative work climate and teacher professionalism have a significant direct influence on teacher performance through a path analysis approach. The combination of a climate of innovation and collaborative learning has been shown to form a work culture that is adaptive and responsive to the demands of change, especially in the context of implementing the Independent Curriculum which emphasizes flexible, participatory, and student-centered learning.

It strengthens the literature by integrating innovation climate and collaborative learning as dual predictors of teacher performance, particularly in the context of the Independent Curriculum in Indonesia. The study provides statistical evidence that innovation climate ($\beta = 0.532$) and collaborative learning ($\beta = 0.336$) both exert significant positive effects on teacher performance, with collaborative learning showing a slightly stronger correlation ($r = 0.701$). The results highlight the importance of creating a school environment that not only fosters creativity and experimentation but also facilitates teacher collaboration. This insight is valuable for school leaders and policymakers in designing professional development strategies and institutional cultures that promote both innovation and cooperation among teachers.

The study was limited to elementary school teachers in Kelapa Dua District, Tangerang Regency, which may restrict the generalizability of findings to other educational levels or regions. The reliance on self-reported questionnaires may introduce bias, as teachers might provide socially desirable responses rather than accurate reflections of their practice. Future studies can expand on these findings by Exploring additional predictors of teacher performance such as leadership, professional motivation, and technological integration. Applying mixed-method

approaches (quantitative and qualitative) to capture richer insights into how innovation climate and collaboration function in practice. Conducting comparative studies across different educational levels (junior high, senior high, vocational schools) and regions to test the robustness and generalizability of the results.

CONCLUSION

The importance of creating a school environment that supports innovation and encourages collaborative learning practices between teachers is key to facing today's educational challenges. A climate of innovation provides space for teachers to be creative, experiment, and apply new approaches to learning, while collaboration between teachers strengthens reflection and continuous professional development. These two factors form a work culture that is adaptive and responsive to change, especially in supporting the success of the Independent Curriculum which emphasizes flexible, participatory, and student-centered learning. Thus, strengthening a climate of innovation and collaboration is not only a strategy for teacher professional development, but also the main foundation for creating a relevant, contextual, and meaningful educational ecosystem. Schools that are able to implement these two aspects will be better prepared to face global dynamics and realize quality learning according to the demands of the 21st century.

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