

# How Instructional Leadership Influences School Quality: Collaboration in Building School Climate

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**ABSTRACT**--This study aimed to analyze the influence of instructional leadership on school quality with a focus on efforts to build a school climate through empowerment and persuasion in the implementation of their professionalism. This study used SEM analysis on 162 junior high school teachers in Bandung, West Java Province, Indonesia. By using structural equation modeling, all dimensions of instructional leadership, namely (1) capacity of principal in supporting classroom teaching and student learning, (2) Empowerment and collaborative development of teacher professionalism in a sustainable manner, (3) implementation of vision and mission for school improvement had a positive influence on school climate. Strong positive influence can be seen in all dimensions of school climate on school quality. The direct influence on school quality was obtained from instructional leadership, but it was not significant. Significant influence can be seen in climate on school quality. Instructional leadership and climate simultaneously influence school quality. The school climate was built by principals and teachers through improved learning. Principal can collaborate with teachers through the development of sustainable professionalism and supervision practices for improving the quality of learning.

**Keywords**-- collaboration, instructional leadership, school climate, school quality

## I. INTRODUCTION

The study of leadership continues to develop more specifically (Pan et al. 2015; Lai et al. 2017), after numerous studies on leadership in general, such as the influence, contribution, and role of leadership on school success (Hsiao et al. 2012; Mulford, 2013; Botha, 2013; Steyn, 2014; Ngang et al., 2015; Van Jaarsveld, L., Mentz, P., & Ellis, S., 2019), contribution of principal to school effectiveness (Hallinger et al. 2013; Zheng et al. 2017; Lai et al. 2017), and the implementation of leadership behaviors to achieve school effectiveness (Rajbhandari, MMS, Rajbhandari, S., Loock, C., & Du Plessis, P. (2017).

So that a more relevant model, type, and approach to leadership are needed for differences in the characteristics and problems of the school both in terms of the maturity of followers, the situation and the competence of the leader. In Indonesia, in 2004, there was research on the application of visionary leadership by Komariah (2004) and continued on other leadership models, such as transformational and authentic leadership (Komariah, A., Kurniady, D.A., 2017). The study concluded that visionary, transformational and authentic leadership had a direct influence on effective schools. But to be more sustainable in achieving school effectiveness in a long period, it

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must be performed by improving the quality of learning. This emphasizes the importance of instructional leadership (Schleicher, 2012). On a global scale, the results of research by Peter Campbell, Marilyn Chaseling, William Boyd & Bradley Shipway (2019), showed that: (1) principals do not see themselves as instructional leaders, but as concept facilitators; (2) understanding of instructional leadership is weak and dependent on previous experience.

Pan et al. 2015; Zhao 2018 assumed instructional leadership as the most important of all leadership theories in the 21st century (Hallinger et al. 2015; Zheng et al. 2017). Leithwood and Jantzi 2000; Hou, Y., Cui, Y., & Zhang, D., 2019) explained that the improvement of the quality of learning can be performed by the application of instructional leadership. Marzano, Waters, and McNulty (2005) reported that effective school leadership can substantially improve student achievement. Thus, the most relevant type of leadership to improve learning processes in schools that is in line with 21st century demands is instructional leadership (Leithwood, Mascall, & Strauss, 2009; Chen, 2018; Pan et al. 2015; Zhao 2018). Instructional leadership has the strongest empirical impact on student learning outcomes among all types of leadership (Hallinger et al. 2015). Instructional leadership influences learning because of the creation of a school climate that focuses on learning improvement (Leithwood, Mascall, & Strauss, 2009; Chen, 2018).

Studies on instructional leadership (Qian et al. 2017; Ross & Cozzens, 2016) and school climate (Hou, Y., Cui, Y., & Zhang, D., 2019; Ross & Cozzens, 2016) and school quality showed that attitudes, behavior, student performance, and interaction are influenced by the learning rules built by the principal and the performance of the teacher in the classroom. With good quality interactions and relationships, the learning process will improve. One thing that remains to be proven is whether instructional leadership built by principals through teacher collaboration can improve learning effectiveness and does instructional leadership represent the relationship between principals and teachers in creating effective learning that can influence school climate and the achievement of school quality?

## II. LITERATURE REVIEW

### *Instructional Leadership builds Collaborative Learning Improvement*

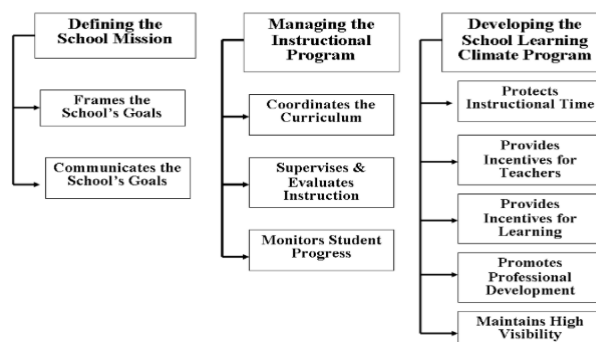
Instructional leadership is defined as a leadership function that supports classroom teaching and student learning (Anderson 2008; Hallinger and Murphy 2012; Robinson et al., 2008; Qian et al., 2017; Hou, Y., Cui, Y., & Zhang, 2019). Instructional leadership is the most important component in improving student learning processes and outcomes (Hammond, et al. 2010; Bush, 2011).

Instructional leadership or often referred to as education leadership, school leadership, visionary leadership, teaching-learning leadership, and supervision leadership (Huber, 2010) is quality leadership which can build the relational and professional approach of the school community in student achievement and teacher attitudes to foster the environment education (Miller 1981; Tubbs and Garner 2008). In line with this definition, Bush (2011) stated that the focus of instructional leadership is on teaching and learning and on teacher behavior in working with students. The target is student learning that is driven by the teacher. This is in line with the definition stated by Usman (2015) that instructional leadership is leadership that focuses on the process and student learning outcomes through professional empowerment of teachers. Thus, instructional leadership can be considered effective when it comes to teacher behavior in implementing learning, developing professional learning that has goals, and building

strong relationships throughout the school (Peter Campbell, Marilyn Chaseling, William Boyd & Bradley Shipway (2019).

Learning development is the "core business" of schools, so the focus of instructional leadership is to maintain and ensure the learning process runs well. It is not wrong if instructional leadership can be said as organizational property as stated by Hallinger & Heck (2010) who conceptualized instructional leadership as 'organizational property' aimed at school improvement.

There are four instructional leadership capacities, namely (1) being an instructional leader who guides teachers towards productive learning experiences, (2) being a problem solver and provider of resources to facilitate teaching and learning, (3) being a visionary leader who develops and communicates an ideal image school, (4) being an agent of change that ensures school effectiveness by facilitating changes in educational operations (Whitehead, et al., 2014). Fullan (2002) stated that only principals can handle complex and rapidly changing environments in implementing reforms that lead to continuous improvement in student achievement. The conceptual framework combines three dimensions in instructional leadership roles, namely: (a) defining the school mission, (b) managing the instructional program, and (c) developing the school learning climate program (Hallinger and Murphy, 1985). The three dimensions are further elaborated in ten details as shown in figure 1.



**Figure 1:** Dimension of Instructional Leadership

Source: Philip Hallinger, 1985, p. 220

Based on the above definition, instructional leadership builds three strengths, namely: (1) capacity of principal in supporting classroom teaching and student learning, (2) Empowerment and collaborative development of teacher professionalism in a sustainable manner, (3) implementation of vision and mission for school improvement.

### ***Climate as Personality, Atmosphere and Life of School***

Principals cannot directly influence student learning, except through the school climate (Ross, & Cozzens, 2016). School climate is defined as the quality and characteristics of school life including goals, values, interpersonal relationships, formal organizational structures, and organizational practices (Clifford et al., 2012). In line with that definition, Cohen et al. (2009) stated that School climate is based on experiences about school life that reflect norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structure. Hoy, Tarter, and Kottkamp (1991) stated that school climate is a relatively durable quality of the school environment experienced by members and influences their behavior and is based on their collective perception of

behavior in school. School climate refers to individual perceptions of moral, relational and institutional aspects of school life (Grazia, Valentina and Molinari, Luisa, 2020). Hoy and Miskel (2005) defined school climate as a set of internal characteristics that distinguish one school from another and influence the behavior of each school member. The school climate is an institutional quality of life that is promoted by students through emotional and physical learning, and school social security. School climate is personality, atmosphere, and individual perceptions about schools (Gunbayi, Ilhan. (2007). School climate is a personality because it has its own characteristics that distinguish it from other schools. School climate as an atmosphere in the workplace, includes a variety of complex norms, values, expectations, policies, and procedures that influence individual and group behavior patterns School climate as a perception of activities, practices, and procedures as well as perceptions about behavior that are valued, supported and expected in an organization. From the various definitions stated above, the researchers concluded that school climate as a school personality shows a safe and comfortable atmosphere and there is a positive relationship that is felt and influences the attitudes and behavior of school members in achieving school quality.

The school climate dimension is a reference for compiling indicators, the dimensions were stated by DeWitt & SLADe, (2014) as follows: (1) Engagement, (2) Empowerment and Autonomy, (3) Inclusivity and Equity, (4) Environment. Zigarmi & Edeburn, (1980) used staff development and school climate assessment questionnaires with six climate dimensions, namely: (1) communication, (2) innovation, (3) advocacy, (4) decision making, (5) evaluation, and (6) attitude towards staff development. The article that researchers examined in 2020 on the dimensions of school climate which became a measurement, illustrated that there were several dimensions used in measuring school climate, namely: (1) safety and order, (2) academic outcomes, (3) relationship, (4) environmental-structural, (5) school connectedness; (6) support, (7) teaching and learning, (8) school facilities, (9) community. These nine dimensions were taken from various articles from the research of Grazia, Valentina and Molinari, Luisa. (2020). Of these nine aspects, there were four aspects that are most used as dimensions of school climate, namely: (1) safety and order, (2) academic outcomes, (3) relationship, (4) environmental-structural. The school climate dimensions that researchers used were: (1) Involvement, (2) Empowerment and autonomy, (3) Inclusiveness and equity, (4) Environment.

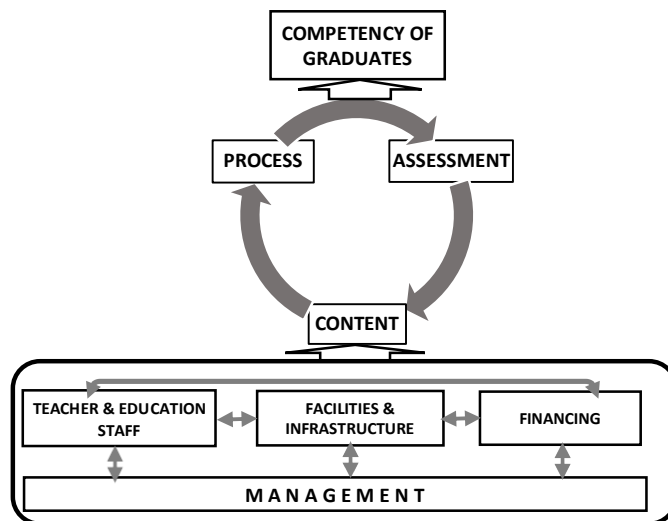
### ***School Quality***

The effective school paradigm has dominated the thinking of school character education for the past two decades. Sammons, P., Hillman, J. and Mortimore, P. (1995) conducted a study of school quality called effective schools with the following characteristics (1) Professional leadership, (2) Vision and shared goals, (3) Learning environment, (4) Concentration on teaching and learning, (5) Teaching with goals, (6) High expectations, (7) Positive reinforcement, (8) Monitoring progress, (9) Rights and responsibilities of students, (10) Cooperation between home and school and (11) A learning organization. Boston Public Schools (BPS) used the School Quality Framework (SQF) as a new measurement system that redefined how school quality is assessed. SQF is based on a proposition that the best school quality is not only determined by high achieving students but also how they grow over time along with the development of other fields, namely teaching and learning; leadership and collaboration; family, community and culture; and student access and opportunities. SQF can be illustrated as follows:



**Figure 2:** School Quality Framework  
 Source: Bostonpublicschool.org

In Indonesia, school quality is based on national education standards based on government regulations in eight standards, namely: (1) content standards; (2) process standards; (3) graduate competency standards; (4) teacher and education staff standards; (5) standard of facilities and infrastructure; (6) management standards; (7) financing standards; and (8) educational assessment standards.



**Figure 3:** Quality Dimensions Based on Indonesian National Education Standards  
 Source: Kemendikbud, 2017.

Based on figure 3, school quality is the level of compatibility between the implementation of primary and secondary education with the National Education Standards in schools. This quality dimension is in accordance with the concept of quality as conformance to standards, this view originated in the quality control approach of the manufacturing industry. The term standard is used to indicate predetermined or called specifications or expectations. If an institution meets the specified standards, it can be considered as a quality institution that suitable for a certain status.

Based on the literature review above, there were four hypotheses that would be proven, namely:

(H2) Instructional leadership had significant influence on school culture

(H1) School culture had significant influence on school quality

(H3) Instruksional leadership and school culture simultaneously had significant influence on School Quality

(H4) School Quality was indirectly influenced by instructional leadership through school culture.

### III. METHODOLOGY

This study used structural equation model (SEM) analysis with partial least square (PLS) approach. This study consisted of three latent variables, namely instructional leadership, climate, and school quality. Each of these variables had more than one manifest variable. Instructional Leadership consists of several aspects, namely, defining the school mission, managing the instructional program, and developing the school learning climate program. School climate consists of several aspects, namely, Engagement, Empowerment and Autonomy, Inclusivity and Equity, Environment. School quality consists of several aspects, namely the quality of graduates, the quality of processes, the quality of assessment, the quality of content, the quality of classroom action research, the quality of infrastructure facilities, the quality of financing, and the quality of management.

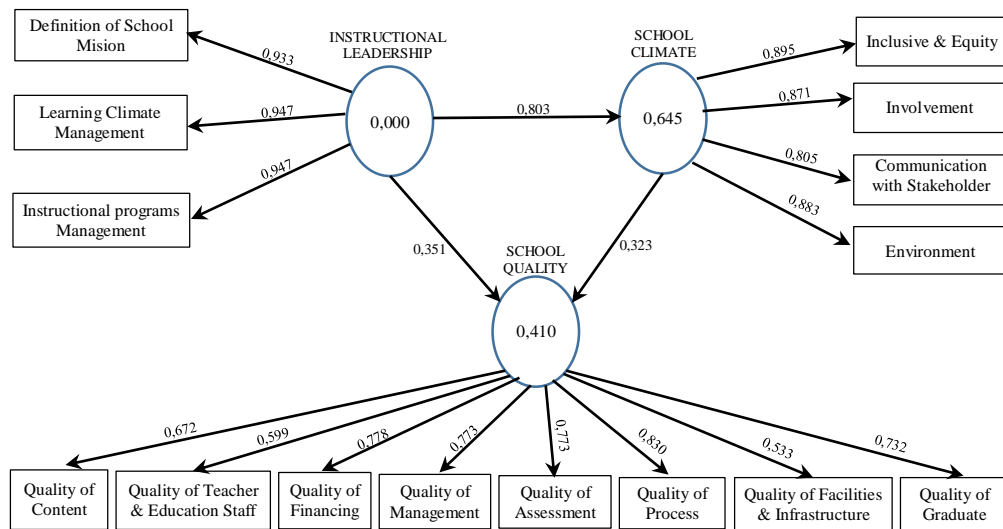
The number of samples was determined by Krejcie table in order to obtain the minimum sample size, at a significance level of 0.10 (10%) for a population of 276, so that the study population in the Krejcie table was in the range of 270 and 280, so the number of samples in the study on 280 populations of 162 samples (Sekaran, 2006). The number of samples had met the minimum sample for SEM analysis by using the maximum likelihood (ML) estimation method, where the required sample size ranged from 150 - 400 (Santoso, 2015).

The instrument used a Likert scale questionnaire with options (1) Almost Never, (2) Rarely, (3) Seldom, (4) Once in a While, (5) Occasionally, (6) Sometimes, (7) Fairly Often, (8) Usually, (9) Very Frequently, and (10) Almost Always (Kouzes & Posner, 2013) for each variable. The instructional leadership variable consists of 30 items that measure three dimensions namely defining the school mission, managing the instructional program, and developing the school learning climate program. The school climate variable consists of 40 items that measure Engagement, Empowerment and Autonomy, Inclusivity and Equity, Environment. School quality variables consist of 60 items that describe eight school quality standards, namely the quality of graduates, the quality of process, the quality of assessment, the quality of content, the quality of the classroom action research, the quality of infrastructure, the quality of financing, and the quality of management.

### IV. RESULTS

#### *Convergent Validity and Discriminant Validity*

Analysis of the measurement model was used to ascertain whether the indicators used in measuring latent variables were reliable and valid. The measurement model was evaluated by convergent validity and discriminant validity of the indicators for each variable. The results can be seen in the figure 4.



**Figure 4:** Results of Outer Model Test

Of the fifteen indicators used, there were three indicators  $<0.70$  and must be eliminated, namely the quality of content, quality of teacher and education staff, and quality of facilities and infrastructure. Validity testing was performed through Convergent Validity and Discriminant Validity. Convergent validity was based on the Average Variance Extracted (AVE) value  $> 0.5$ , and all latent variables had AVE value  $> 0.50$ . So, it can be concluded that all latent variables or constructs in the study met the convergent validity. Discriminant Validity was measured by using the square root AVE of each latent variable. A latent variable was judged to meet discriminant validity if the value of the square root AVE is greater than the correlation value of the latent variable, it showed the comparison of square root AVE and the correlation value of a latent variable with other latent variables. The latent variable SC (School Climate) had a square root AVE value of 0.876 where the value was greater than the correlation value of the Climate latent variable with other latent variables. Instructional leadership and SQ (School Quality) latent variables showed the value of the square root AVE which was greater than the correlation value with other latent variables. It can be concluded that of the four variables in this study met discriminant validity.

**Structural Model Analysis**

Structural model analysis was carried out in two ways, namely variance of endogenous variables and goodness of fit. Based on the variance of endogenous variables, the calculations can be seen in table 1. To see the prediction of the structural model, the  $R^2$  value of each endogenous variable can be used.  $R^2$  value of 0.75 indicated the structural model was in the strong category,  $R^2$  value of 0.50 indicated that the model was in moderate category, while  $R^2$  value of 0.25 indicate that the model was in weak category.  $R^2$  value of 64.5% in the School Climate variable showed that the instructional leadership variable strongly explained the 64.5% variance of the relationship to Climate. The  $R^2$  value of 44.5% on the variable (School Quality) showed that instructional leadership variables through mediation of climate variable moderately explained the 44.5% variance of the relationship between the two variables on school quality.

**Table 1:** Results of R<sup>2</sup> Test

	<b>R<sup>2</sup></b>	<b>%</b>	<b>Criteria</b>
School Climate	0.645	64.5%	Strong
School Quality	0.445	44.5%	Moderate

Goodness of fit was used to determine the structural model in the study to explain the phenomenon being studied. The basis of this test was to calculate the value of R<sup>2</sup> and produce a Q-square value (Q<sup>2</sup>). The result of the Q-square calculation is as follows.

$$\begin{aligned}
 Q^2 &= 1 - (1-R^2_1) (1-R^2_2).....( 1-R^2_p) \\
 &= 1 - (1- 0.645) ( 1- 0.445) \\
 &= 1 - 0.197 \\
 &= 0.803
 \end{aligned}$$

The calculation result explained that the structural model in the study was able to explain strongly the relationship of instructional leadership and climate variables with school quality. The value of 0.803 explained that the two variables influenced school quality by 80.3% while the remaining 19.7% was influenced by other factors.

**Structural Model Significance**

Path coefficient significance test was carried out to obtain the influence of the relationship between endogenous and exogenous variables. From the test results, each coefficient can be seen in the following table.

**Table 2:** Results of Path Coefficient Test

	<b>Original Sample (O)</b>	<b>Sample Mean (M)</b>	<b>Standard Deviation (STDEV)</b>	<b>Standard Error (STERR)</b>
<b>SC -&gt; SQ</b>	0.350	0.353	0.123	0.123
<b>IL -&gt; SQ</b>	0.803	0.805	0.035	0.035
<b>IL -&gt; SQ</b>	0.634	0.642	0.075	0.075

Based on the results of the path coefficient test shown in the Original Sample column can be explained as follows: The influence of Climate on School Quality was 0.350 and in positive direction. This can be interpreted that every increase in the Climate variable will influence the School Quality by 0.350. The Influence of Instructional Leadership on Climate was 0.803 and in positive direction. This can be interpreted that every increase in the Instructional Leadership variable will influence the Climate by 0.803. The Influence of Instructional Leadership to School Quality was 0.634 and and in positive direction. This can be interpreted that every increase in the Instructional Leadership variable will influence the School Quality by 0.634.



**Hypothesis Test (Bootstrapping)**

**Table 3:** Results of *Bootstrapping* Test

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics ((O/STERR))	P Value	Judgment
H1 SC -> SQ	0.350	0.353	0.123	0.123	2.839	0.005	Accepted
H2 IL -> SC	0.803	0.805	0.035	0.035	22.673	0.000	Accepted
H3 IL -> SQ	0.634	0.642	0.075	0.075	8.483	0.000	Accepted

Based on the bootstrapping test results above, statistical values and p-values were obtained as a basis for the decision to accept the proposed hypothesis. If the T-Statistics value > 1.90 then the hypothesis is accepted and, vice versa, if the T-statistics value < 1.90 then the hypothesis is rejected. Another way that can be used in accepting hypotheses is to look at the P-Value. If the P-value < 0.50, then it can be the basis for accepting the hypothesis. From the table above, it can be concluded that: (1) School climate significantly influenced school quality, with a T-statistics of 2.839 and a P-Value of 0.005, so the hypothesis is accepted. (2) Instructional leadership significantly influenced school climate, with a T-statistics of 22.673 and a P-Value of 0.000, so the hypothesis is accepted. (3) Instructional leadership significantly influenced School Quality, with a T-statistics of 8.483 and a P-Value of 0.000, so the hypothesis is accepted.

**Hypothesis Test (Mediation)**

Climate variable becomes mediating variable between instructional leadership and school quality. Mediation variable can be interpreted as variable that mediates the relationship between exogenous variables and endogenous variables. Mediation test is the indirect effect testing of an exogenous variable through a mediator variable. The hypothesis developed in this study is whether climate variable mediates the relationship between leadership and school quality

The results of hypothesis test can be performed by comparing the results of the path coefficient multiplication with the direct coefficient or by calculating the significance level through the Sobel Test. In SmartPLS software, the results of mediating variable test can be seen in indirect effect test. The results of this test are as follows:

**Table 4:** Indirect Effect Test

Hypothesis	Original Sample (O)	Standard Error (STERR)	T Statistics ((O/STERR))	P Value	Judgment
H4 IL -> SC -> SQ	0.978	0.100	2.824	0.005	Accepted

The indirect effect test above explained that instructional leadership had a significant indirect effect on school quality. With a T-statistics of 2.824 and P-value > 0.005, the hypothesis proposed in this study was accepted. These results are also strengthened by the results of a comparison of their indirect effect as shown in the following table.

**Table 5:** Coefficient Comparison Test

Hipotesis		Original Sample (O)	Calculation	Judgment
H4	IL -> SC	0.803	0.803 x 0.350 = 0.281	Accepted
	SC -> SQ	0.350	(0.281 < 0.634)	
	IL -> SQ	0.634		

Based on the two forms of testing above, it can be explained that both significant variables had direct and indirect effects. The results showed that the correlation coefficient of the direct effect was greater than the indirect effect, so it can be simply concluded that school quality was more directly influenced by instructional leadership.

## V. DISCUSSION

The results showed that instructional leadership with four dimensions, namely defining the school mission, managing the instructional program, and developing the school learning climate program had direct and indirect influence on school quality. The results of this research are in line with research by Robinson et al. (2008); Supovitz et al. (2010), instructional leadership influenced school effectiveness which was judged by student academic achievement. The influence of instructional leadership in the study can improve school quality when principal focuses on efforts to increase student academic achievement. A study by Hou, Y., Cui, Y., & Zhang, D. (2019), also found the same thing as the significant influence of instructional leadership on student academic achievement. Previous studies showed that instructional leadership had the strongest empirical influence on student learning outcomes among all types of leadership (Hallinger et al. 2015). For example, Robinson et al conducted a meta-analysis and found that the average influence of instructional leadership on student learning outcomes was 3 to 4 times that of transformational leadership (Robinson et al. 2008). Instructional leadership becomes very meaningful and influences the quality of schools when principal focuses on student learning outcomes. While student learning outcomes are influenced by the teacher and the school environment. Thus, the principal can influence the school climate which can strengthen quality through conducive learning. Hou, Y., Cui, Y., & Zhang, D. (2019) stated that instructional leadership influenced student academic achievement through school climate.

The results showed that instructional leadership did not directly influence school quality but the school climate could mediate it strongly. Although the results of previous studies did not argue that principal leadership influenced school success, other results showed that the most effective variables were school climate and culture through teacher collaboration, professional development, and policies and procedures (Louis, Leithwood, Wahlstrom, & Anderson, 2010 ). This can be interpreted that to improve the quality of schools, the principal must focus on the

climate to create school quality. The success in forming school quality is part of the success of principal in implementing instructional leadership that is built on good relationships and collaboration with teachers (Ross, DJ, & Cozzens, JA (2016). Chen (2018) confirmed that the frequency of school leaders interacting with teachers in specific activities, such as observing teaching, modeling instruction, studying students' work, and giving teachers feedback had positive influences on School climate.

Several studies established a relationship between instructional leadership and school climate that influences school success. This study indicated the similarity of results, instructional leadership was built by managing the school climate, such as effective communication, teacher advocacy, participatory decision making, evaluation procedures that are fair and based on collaboration in creating an atmosphere for learning had a major influence on school success (Jafeth E. Sanchez, Jeffrey M. Paul & Bill W. Thornton, 2020). A positive school climate can increase feelings of security in school (Huang & Cornell, 2018), and is a representation of neat communication and collaboration between the principal and the teacher as well as with stakeholders about how children can learn comfortably. Principal directly or indirectly influenced the school quality.

## VI. CONCLUSION

Instructional leadership both directly and indirectly influenced the achievement of school quality. Instructional leadership had a major influence on school quality with an orientation to the quality of graduates, the quality of assessment, the quality of infrastructure, the quality of financing, and the quality of management. As for the quality of the process, the quality of the content and the quality of educators and education staff were not known because the test results of these three aspects were invalid and reliable. The school climate had a positive and significant influence on all four dimensions of school quality. The school quality would improve when involvement, empowerment and autonomy, inclusiveness and equity, as well as the environment were built. The school climate had successfully mediated instructional leadership on school quality. Instructional leadership and school climate simultaneously can explained strongly the high and low quality of the school by 80.3% and the remaining 19.7% was determined by other variables such as principal management competencies, teacher competencies, teacher commitments, school culture and others.

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