



# The Role of Class Climate and Student Involvement in Math Achievement in High School Students in Langsa City

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## ABSTRACT:

Learning achievement becomes a concrete mirror of a student's academic ability after participating in learning activities in a formal education. Student achievement is closely related to class climate and student engagement. This study aims to determine whether there is a role for class climate and student involvement on learning achievement in class X SMA students in Langsa City. This study used a Non probability sampling with purposive sampling technique and involved 296 high school students in class X in Langsa City. Data collection uses two scales: the Class climate scale and the student engagement scale as well as a learning achievement test: a math problem. The analytical technique used in this research is multiple regression analysis. The results of the study show that (1) class climate has a significant effect on learning achievement, (2) student involvement has a significant effect on learning achievement, (3) class climate and engagement jointly affect learning achievement in class X students in Langsa City. The implication of this research is that class climate and student involvement are factors that influence learning achievement. This shows that students feel a positive climate in their class and high student involvement will affect the improvement of their learning achievement.

**KEYWORDS:** Class climate, Student engagement, learning achievement, High School Student

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## I. INTRODUCTION

Setiap program pendidikan memiliki tuntutan kompetensi yang memicu penciptaan dan meningkatkan kualitas proses belajar serta mengajarnya demi menciptakan output dari proses belajar (Novesar, 2021). Pelaksanaan proses belajar memiliki peran yang sangat penting dalam menghasilkan prestasi belajar (Maulana, Aisyah & Anhaf, 2021).

Learning achievement can decrease if students have unfavorable or favorable perceptions of certain lessons and can cause students to have low enthusiasm for learning (Pasehah, Firmansyah and Adirakaisiwi, 2020). Stigma inherent in students' minds about difficult lessons often makes students think that a difficult or boring lesson is the cause of dislike for a lesson. The fear of having difficulty while learning makes students unconsciously refuse to accept lessons.

Students who have a negative perception of mathematics usually have a wrong perception of the connectedness of mathematics in everyday life (Intisari, 2017). Students perceive mathematics as a scary, difficult and disliked subject in the learning process. This can be caused by a negative perception of mathematics, lack of a basic understanding of learning mathematics, and dislike teaching methods that are not appropriate (Ningsih, 2014; Sapta, 2011; Intisari, 2017; Aisyah & Sofyan, 2014).

Dissatisfaction with a lesson can affect the success of the learning process and will make students lazy to learn, so that it will directly affect student learning achievement (Harisah and Adila, 2020). This is in line with research conducted by Intisari (2017) which shows that students' disinterest in student learning causes students to experience a decrease in participating in the learning process, one of which is mathematics. Based on a survey obtained by researchers on 30 students, it was found that as many as 86% of students stated that science

class lessons were more difficult than social studies. A total of 76.6% stated that mathematics is the most difficult subject compared to other subjects. The reason the student stated that mathematics was difficult was because mathematics had complex formulas and calculations. Students perceive mathematics as a scary, difficult and disliked subject in the learning process. This can be caused by a negative perception of mathematics, lack of a basic understanding of learning mathematics, and dislike teaching methods that are less precise (Ningsih, 2014; Sapta, 2011; Intisari, 2017; Aisyah & Sofyan, 2014).

According to Shah (2008), one of the factors that influence learning achievement is the teaching and learning process in the classroom. The teaching and learning process in the classroom means the learning methods used in the classroom, the relationship between students and teachers and student involvement in the classroom. So it can be said that the teaching and learning process in the classroom can be a predictor of student achievement. Skinner (1990) further stated that student involvement is considered important because students can show the level of attention, effort, persistence, positive emotions, and commitment in the learning process.

Research conducted by Connell and Wellborn (1991) explains that students who have high engagement (student involvement) will show behavioral interest in learning and have positive emotions, they survive in facing challenges in learning and doing assignments. Students who have high engagement are characterized by students who are able to create a learning atmosphere that is harmonious, harmonious and balanced in the learning and learning process, student involvement in submitting assignments, providing answers to teacher questions, asking questions/problems and trying to answer them themselves, assessing answers from colleagues, and solve problems that arise during the teaching and learning process (Hamalik, 2003). Factors that influence student involvement include achievement motivation and student goals, student and school interactions, experience, high expectations from students and the last is the perception of the classroom climate (Miller et al, 2011). Bloom (1979) defines classroom climate as a condition, influence and stimulation that comes from outside which includes physical, social and intellectual influences that can affect students. Fassinger (1995) and Nunn (1996) put more emphasis on classroom climate, because classroom climate is the main predictor of participation in the classroom. Class climate is also very important for an educational institution because it can affect student engagement.

Based on the background of the problems described above, the researcher wants to find out more about the role of classroom climate and student involvement on learning achievement in high school students.

## **II. LITERATURE OF VIEW**

### **1. Prestasi Belajar**

According to Arikunto (2009) states that learning achievement reflects the levels of students to what extent they have been able to achieve the goals set in each field of study. Symbols used to represent grades, both letters and numbers, should only represent achievements. According to Arikunto (2009), the measurement of learning achievement can be done in various ways by giving a test that has a function, namely to measure students' abilities and the success of teaching programs. The tests are divided into 3 types:

- a. Diagnostic tests are tests that are used to find out the weaknesses of students so that they can provide the right treatment.
- b. Formative test is to find out the extent to which students have been formed after following a certain program and this test is used at the end of the lesson.
- c. Summative test is a test that is carried out after the end of giving a group of programs or a larger program and is carried out at the end of each semester.

### **2. Iklim Kelas**

Ormrod (2003) states that the classroom climate implies a place where communication between students is created; a place where control is given to students in activities in class; a place to communicate problems that occur at school; and a place to communicate acceptance, appreciation and concern of teachers to their students. Meanwhile, Fraser (2003) states that the classroom climate is all situations that are formed in the classroom as a result of interactions between students and teachers, and between students and other students. According to Fraser (2003), there are seven aspects that can be used to measure classroom climate:

1. Student cohesiveness; This dimension can be seen from the extent to which students know, help and support each other. This cohesiveness can be in the form of doing assignments together and helping other students when they do not understand the lesson.
2. Teacher support; This dimension measures the extent to which the teacher provides assistance, support for students and the teacher's emotional attention and involvement with students. This support can be in the form of providing equal opportunities for all students to ask questions, answer questions asked and so on.
3. Task orientation; This dimension is in the form of the attention given by the teacher to students in following the lesson and trying to understand the given task and emphasizing how important it is to complete the activities that have been planned.

4. Cohesiveness; This dimension emphasizes class activities that are carried out together or in groups. Teachers sometimes give assignments in groups to see the ability to work together among students.
5. Investigation activities (investigation); This dimension emphasizes the extent to which students can solve problems in class without being told how to solve them.
6. Equity; This dimension can be seen through every student getting the same opportunity to speak. Teachers do not discriminate against students.
7. Involvement; This dimension describes student involvement in learning activities that include student satisfaction with class conditions so that they can participate actively.

#### **8. Keterlibatan Siswa**

Student involvement is a feeling of belonging to students and being part of the school in relation to doing assignments and participating in school activities (Eccles & Wang, 2012). Trowler (2010) also states that student involvement is the involvement of students in learning activities in the classroom to improve achievement. Trowler (2010) said that student engagement consists of three dimensions.

a. Behavioral engagement. The first dimension is behavioral engagement. Students show their behavioral engagement with behaviors that aim to train or develop their abilities, both understanding and skills. A student with good behavioral engagement will obey the norms, be present on time, never absent from class and will not interfere with the learning process.

b. Emotional engagement. The second dimension is emotional engagement. Students show their student engagement by involving their emotions in the learning process. Students with good emotional engagement will be personally interested in undergoing the learning process, enjoy the learning process and have a sense of belonging. An example of behavior that reflects emotional engagement is that students are enthusiastic in studying subjects.

c. Cognitive engagement. The last dimension is cognitive engagement. Students show their student engagement by using their cognitive skills. Students with good cognitive engagement will be fluent in doing the exams they face, evaluate understanding through the grades they get on the exams, are confident to face the exams and will enjoy challenges. An example of behavior that reflects cognitive engagement is during exams, students study late at night to get the desired grades.

### **III. MATERIAL AND METHODS**

This research were using quantitative method to test the hypothesis. This study involved a subject of 296 high school students in class XI in Langsa. The data collection in this study used two scales, namely the class climate scale compiled by researchers based on the aspects proposed by Fraser (2003), Towler (2010), and learning outcomes test. . The scale will be compiled with a Likert scale model by providing a response that moves from a negative response to a positive response and is designed to see how strongly individuals agree or disagree with a statement (Azwar, 2013).

#### **A. Class Climate Scale**

The measurement of the classroom climate variable in this study uses a scale that is based on the aspects proposed by Fraser (2003) which have been tested by Andini and Ulfasari (2016), namely student cohesiveness, support from teachers, direction of assignments, cooperation, investigation activities, equality. and engagement.

#### **B. Student Engagement Scale**

The measurement of student engagement was carried out in this study using a scale that was compiled based on the aspects proposed by Trowler (2009) which had been tested by Andini and Ulfasari (2016).

### **STATISTICAL ANALYSIS**

This study involved a subject of 296 high school students in class XI in Langsa. This study used quantitative method using simple linear regression analysis to see the role of class climate and student involvement in math achievement in high school students in Langsa City. The Statistical Packages for Social Sciences (SPSS, 25.0) was used in this research.

**Table 1.** The role of class climate and student involvement in math achievement in high school students in Langsa City

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44.450	1	44.450	.225	.000 <sup>b</sup>
	Residual	60752.509	294	206.641		
	Total	60796.959	295			

*Table 5. R . Determination Test*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.270 <sup>a</sup>	.173	.127	14.37502

a. Predictors: (Constant), X2\_STUDENTENG  
b. Dependent Variable: Y\_TESPRESTASI

Based on Table 1 above, it shows a correlation (R) of .270. This shows that the variable student engagement and learning achievement tests in class XI high school students in Langsa have a relationship because they are in the range of .00-.20 (Guilford, 1956). The table above also shows the value of the determinant coefficient (R<sup>2</sup>) of .173. This value indicates that the effective contribution of the effect of student engagement on learning achievement tests in class XI high school students in Langsa is 17.3%, while the rest is caused by other factors not examined in this study.

The next analysis will look at the equation of the regression line for the effect of student engagement on the learning achievement test for class XI high school students in Langsa, which can be seen in Table 2 below:

Table 2. Equation analysis of student engagement on learning achievement tests for class XI high school students in Langsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	(Constant)	70.008	5.256		13.320	.000
	X2_STUDENTENG	-.029	.063	-.027	-.464	.000

a. Dependent Variable: Y\_TESPRESTASI

The equation above shows that student engagement on learning achievement tests has a significant effect, with a significance value of .000 ( $p < .05$ ). This shows that there is a positive relationship between student engagement and student achievement tests. Based on this regression analysis, it can be concluded that the H1 of this study is accepted. This means that the higher student engagement in students, the higher high school learning achievement in Langsa City, and vice versa.

#### IV. DISCUSSION

Based on the results of the research that has been done, it was found that the significance of .001 ( $p < .05$ ), which means that the class climate and student involvement together affect learning achievement in class X high school students in Langsa City. Thus the hypothesis in this study is accepted. This study shows that when students feel a positive climate in their class and high student involvement, it will affect the improvement of their learning achievement.

The results of the effective contribution of class climate and student involvement are 18% while the rest is explained by other factors outside this research model. This shows that it is not enough that only the classroom climate and student involvement have an effect on learning achievement, but there are several factors that affect learning achievement such as: learning motivation, family, teaching methods, curriculum and student learning environment (Djamarah, 2002). The results of a study conducted by Makatita and Azwan (2021) prove that learning motivation contributes 56.1% to learning achievement in high school students. This indicates that in addition to the classroom climate and student involvement, learning motivation is one of the variables or factors that have a very significant effect on learning achievement.

A positive school climate is expected to increase student involvement in the learning process. A positive climate will shape positive behavior, especially from students, such as increasing academic achievement and reducing discipline problems, as well as student involvement related to academic success (Lailiyah, Burhani and Mahani, 2017). Student involvement in the learning process can be observed from student behavior such as student participation and the amount of time students need to do assignments. Skinner, Wellborn and Connell (2011) define student involvement as a desire to act, try and be serious, as well as emotional conditions involved in learning activities.

Descriptive data in the results of this study are known to students with different school origins, namely there are high school students and MA students. It is known that the number of MA students is the most dominating as much as 75% compared to high school students as much as 25%. The results of a study conducted by Muslimin (2012) regarding school origin on learning achievement prove that there is no difference in students with high school, MA and vocational backgrounds. Furthermore, based on the research results, the researchers found that the contribution of the classroom climate to learning achievement was only 3.9%, while the contribution of student involvement to learning achievement was 17%. This shows that student involvement

has a greater factor than classroom climate on learning achievement. One of the factors that influence students who have high student involvement is the need for autonomy. Individuals have a need for autonomy or a desire to do something for personal reasons. (Frederick, et al, 2004). This shows that students can improve their learning outcomes if they are followed by their own desires.

The implication of this finding is that class climate and student involvement are jointly factors that contribute to learning achievement.

## V. CONCLUSION

Based on the results of the research that has been done, it can be concluded that the class climate plays a positive and significant role on learning achievement in high school students in Langsa City with a contribution of 18%. The positive influence given shows that the more positive the classroom climate, the better the learning achievement of high school students in Langsa City. Vice versa, the more negative the classroom climate, the lower the learning achievement of high school students in Langsa City. Furthermore, student involvement has a positive role on learning achievement with  $p = .000$  ( $p < 0.05$ ). That is, student involvement plays a significant role in learning achievement. This study shows that the higher the involvement of students, the higher the learning achievement of high school students in Langsa City. Class climate and student involvement together contribute to learning achievement positively with an effective contribution of 18%. That is, the more positive the classroom climate and student involvement, the higher the learning achievement. On the other hand, the more negative the student's classroom climate and student involvement, the lower the learning achievement of high school students in Langsa City.

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