THE INFLUENCE OF CLASS CLIMATE AND SELF CONCEPT TOWARDS ACHIEVEMENT MOTIVATION AND PHYSICS LEARNING RESULT OF STUDENT AT XI IPA GRADE SMA NEGERI 1 KAHU

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Abstract - This research is expost–facto research which aims to determine the influence of: (1) the class climate towards physics learning result, (ii) class climate towards achievement motivation, (iii) self concept towards physics learning result, (iv) self concept towards achievement motivation, and (v) achievement motivation towards learning result. The population in this study were all students of XI IPA Grade SMA Negeri 1 Kahu as many 181 students. The sample taken by using Slovin technique with 126 students. The process of collecting data using questionnaires and test of physics learning result that have been tested empirically. Data of the research result were analyzed by using analysis method of Structural Equation Modeling (SEM) with technique of Analysis of Moment Structures (AMOS). The analysis procedure is performed with descriptive analysis and inferential analysis, factor analysis and verification of structural model AMOS. The result of research showed that the structural equation model that describe the influence of class climate, self concept, achievement motivation, and physics learning result can be accepted. Through the model can be conclusion that:(i) class climate doesn't have positive direct influence and significant towards physics learning result, (ii) class climate has positive direct and significant toward achievement motivation, (iii) self concept doesn't have positive direct influence and significant towards physics learning result, (iv) self concept has positive direct and significant toward achievement motivation, (v) achievement motivation doesn't have positive direct influence and significant towards physics learning result

Keywords: *Expost-Facto, Class Climate, Self Concept, Achievement Motivation, Physics Learning Result*

I. INTRODUCTION

In constitution about national education system "National education serves to develop the ability to form the character and civilization of the nation's dignity in the context of the intellectual life of the nation, is aimed at developing students' potentials in order to become a man of faith and fear of God Almighty, the noble character, healthy, knowledgeable, skilled, creative, independent and become citizens of a democratic and responsible ".Potential students as a subject of study as well as the role of the teacher in the learning process is a very important key in determining the success of teaching in schools. The success of teaching can be seen from the results of their study. The results of this study are determined by internal and external factors such as the learning environment, classroom and school climate, academic self-concept and motivation of learners.

Judging from the role of teacher as an educator, mentor, coach, and leaders who can create a classroom climate that is attractive, safe, and comfortable, its presence in the midst of students can break the ice rigidity, stiffness and boredom learning droop received by the students. Class climate is not conducive to negative affect the learning process and the difficulty of learning objectives achieved. Classroom climate and attract much needed conducive to learning physics

largely considered difficult by students so that the taste is hard it can be minimized with the comfort in the classroom. Students who have a positive perception of the classroom climate will feel comfortable when entering the classroom, knowing that there will be the care and respect them, and believe that it will learn something valuable. But otherwise the students who have the perception of the classroom climate that is negative student will feel fear if they are in the classroom and doubt whether they will get valuable experience. This is similar to the research that has been done by (Hadinata, 2009) which found that classroom climate contribute significantly to the motivation to learn in high school students [1].

In addition to classroom climate there are also internal factors that influence learning outcomes ie self-concept. According to (Desmita 2010) mentions that self-concept is the notion of self that includes beliefs, views, and votes over oneself. Students who are anxious in the face of the final exam by saying "I actually stupid boy, I certainly would not get a good value", is already reflecting expectations of what will happen with the test results. The phrase indicates his belief that he does not have the ability to obtain a good value [2].

All of these things must be accompanied also with motivation. Motivation is very important in teaching berajar activities, because their motivation to encourage the spirit of learning and conversely lack of motivation will weaken the spirit of learning. A student who learned without motivation or lack of motivation, will not work with the maximum. Thought is supported by studies that have been done before. As research has been done by (Saadi, 2012) that the achievement motivation have a relationship that is positively correlated to the learning result.

Thus the rationale encourage researchers to conduct research on the influence of class climate and self-concept towards achievement motivation and physics learning result of students at XI IPA Grade SMA Negeri 1 Kahu. The problems in this research are: (1) Does the class climate have positive direct influence towards physics learning result? (2) Does class climate have positive direct influence towards achievement motivation? (3) Does the self-concept have positive direct influence towards physics learning result? (4) Does self-concept have positive direct influence towards achievement motivation? (5) Does the achievement motivation have positive direct influence towards physics learning result? The purpose of this study was to answer the formulation of the problem, namely (1) to determine the direct influence of class climate towards physics learning result, (2) to determine the direct influence of class climate towards achievement motivation, (3) to determine the direct influence self-concept towards physics learning result, (4) to determine the direct influence of self-concept towards achievement motivation, and (5) to determine the direct influence of achievement motivation towards physic learning result. The results of this study are expected to provide good benefits for reference to learners to be able to improve learning outcomes through the establishment of positive classroom climate, form a good self-concept along with achievement motivation.

II. RESEARCH METHOD

The type of research is the study "ex post facto", which is causality and correlation. This study attempted to investigate the direct influence of the independent variables namely the class climate and self-concept on physics learning result as dependent variables, both directly and through the achievement motivation as an intervening variable. Designs of linkages between these variables are described as follows.
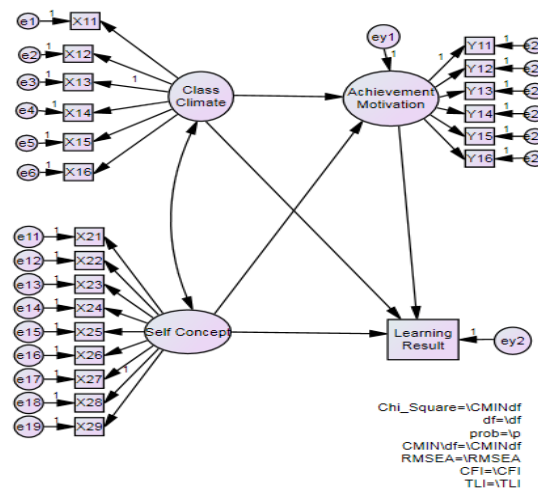
Figure 1. Structural Model of Functional Interwoven Proposed Among Variables Research

The populations in this study were all students of class XI IPA SMA Negeri 1 Kahu academic year 2015/2016, Bone Regency, and South Sulawesi. Distribution of students in each class is shown in table 1 below.

Table 1. Distribution Of Student Class XI IPA

Name of Class	Number of Students
XI IPA 1	31
XI IPA 2	29
XI IPA 3	29
XI IPA 4	30
XI IPA 5	32
XI IPA 6	30
Total	181

The technique used to determine the sample size is by slovin technique. As for the distribution of the sample is more presented in table 2 below.

Table 2. Distribution Of Research Sample

Name of Class	Number of Students
XI IPA 1	20
XI IPA 2	-
XI IPA 3	29
XI IPA 4	25
XI IPA 5	25
XI IPA 6	27
Total	126

The instrument used in this study consisted of questionnaire of the class climate, self concept questionnaire, questionnaire achievement motivation, and test of physics learning result.

Before the instrument is ready for use, it must first be validated instrument that is validation of content and empirical validity. Contents validation test conducted on measuring instruments. Analysis of the contents of the instrument validation is done in this research that uses models Gregory in the form of a model agreement among experts. Empirical validation test performed on the test results the instrument consisting of item validity test and reliability test. Types and data collection techniques used in this study can be seen in the following table.

Table 3. Types and Data Collection Techniques

Data	Type of Data	Data Collection Techniques	Data Sources	Instrument
Class Climate	Interval	Questionnaire	Students	Questionnaire of class climate
Self Concept	Interval	Questionnaire	Students	Questionnaire of self-concept
Achievement Motivation	Interval	Questionnaire	Students	Questionnaire of Achievement Motivation
Physics Learning	Interval	Questionnaire	Students	Questionnaire of Physics

Result				Learning Result

Analysis of the data used in this study consisted of a statistical analysis of descriptive and inferential analysis to test the hypothesis.

a.   Analysis of Descriptive Statistic

A function of descriptive analysis is to provide an overview of the data obtained, such as: the number, maximum, minimum, mean, mode, median, standard deviation and variance.

b.   Normality Test

Normality test is used to determine whether the data sample studied came from populations with normal distribution or not. Values were considered in determining test multivariate normality is critical ratio by using AMOS 22.0.

c.   Linearity Test

Linearity test is performed to determine whether there is a linear relationship between the independent variables with the dependent variable using SPSS 22.0. The variable is said to be linear with other variables when $F_{calculate} < F_{table}$

d.   Multicolinearity Test

Multicolinearity test is performed to determine whether there is a significant relationship between independent variables in a multiple linear regression model. Multicolinierity test was performed using statistical program SPSS 22.0 to see the value of Tolerance and Variance Inflation Factor (VIF) in the regression model.

e.   Factor Analysis

Factor analysis was performed using AMOS 22.0 to be able to test the influence of the indicator with latent variables, a model must be eligible Goodness of Fit, which is an index that is used as a reference model is said to be acceptable fit. The index used is the Chi-square, CMIN / df, TLI, CFI and RMSEA.

III.   RESULT AND DISCUSSION

A.   *Analysis Result of Research Data*

1.   *Descriptive Statistic*

Table 4. Summary of Descriptive Analysis Result

Statistic	Achievement motivation	Class Climate	Self Concept	PhysicsLearning Result
Number of responden	126	126	126	126
Mean	143.8095	135.5952	136.9921	14.2302
Std. Error of Mean	1.00764	.97721	1.17419	.30093
Median	145.0000	135.0000	138.0000	15.0000
Mode	153.00	130.00[a]	140.00	15.00
Std. Deviation	11.31068	10.96918	13.18029	3.37796
Variance	127.931	120.323	173.720	11.411
Skewness	-.271	-.114	-.373	-.253
Std. Error of Skewness	.216	.216	.216	.216
Range	62.00	53.00	75.00	18.00
Minimum	109.00	109.00	96.00	3.00
Maximum	171.00	162.00	171.00	21.00
Sum	18120.00	17085.00	17261.00	1793.00

Research result data of variable the class climate then presented the list of frequency distribution as shown in table 5 below.

Table 5. Distribution Of Frequency, Percentage, And Categories For Class Climate

No	Interval Score	Frequency	Percentage (%)	Category
1	36 – 64	0	0	Very Low
2	65 – 93	0	0	Low
3	94 – 122	15	11.91	Moderate
4	123 – 151	102	80.95	High
5	152 – 180	9	7.14	Very High
	Sum	126	100	

Research result data of variable the self concept then presented the list of frequency distribution as shown in table 6 below.

Table 6. Distribution Of Frequency, Percentage, and Categories for Self-Concept

No	Interval Score	Frequency	Percentage (%)	Category
1	38 – 68	0	0	Very Low
2	69 – 99	1	0.79	Low
3	100 – 130	32	25.40	Moderate
4	131 – 161	90	71.43	High
5	162 – 192	3	2.38	Very High
	Sum	126	100	

Research result data of variable the achievemnet motivation then presented the list of frequency distribution as shown in table 7 below.

Table 7. Distribution Of Frequency, Percentage, and Categories for Achievement Motivation

No	Interval Score	Frequency	Percentage (%)	Category
1	36 – 64	0	0	Very Low
2	65 – 93	0	0	Low
3	94 – 122	4	3.18	Moderate
4	123 – 151	87	69.04	High
5	152 – 180	35	27.78	Very High
	Sum	126	100	

Research result data of variable physics learning result then presented the list of frequency distribution as shown in table 8 below.

Table 8. Distribution of Frequency, Percentage, and Categories for Physics Learning Result

No	Interval Score	Frequency	Percentage (%)	Category
1	0 – 5	1	0.79	Very Low
2	6 – 11	25	19.84	Low
3	12 – 17	77	61.11	Moderate
4	18 – 23	23	18.25	High
5	24 – 29	0	0	Very High
	Sum	126	100	

2. *Analysis Prerequisites Test*

a) *Data Normality Test*

By using a significance level of 0.01, the data is said to be normally distributed if the critical ratio (cr) of kurtosis is between ± 2.58. Based on the results of the output data normality test on Assessment of normality, normality test results obtained by the value of the multivariate cr kurtosis -2.58<2.080<+2.58 which means multivariate distribution is normal.

b) *Linearity Test*

Based on the results of linearity test the influences of X1 with Y2 have $F_{cal}=0.71<F_{table}=1.54$. Influence X2 with Y2 have $F_{cal}=1.38<F_{table}=1.55$ and influence Y1 with Y2 have $F_{cal}=0.83<F_{table}=1.57$ So it can be concluded that the influence of variable class climate with physics learning result, the influence self-concept with physics learning result and achievement motivation with physics learning result are linear and are eligible for further analysis.

c) *Multicolinearity Test*

Table 9. The Result of Multicolinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
	Achievement motivation	.704	1.421
	Class Climate	.664	1.506
	Self Concept	.672	1.489

Dependent Variable: Physics Learning Result (Y_2)

3. Factor Analysis

a) Factor Analysis of Latent Variables

Test the fit between the theoretical models to empirical data can be seen at the level of Goodness of Fit Statistics.
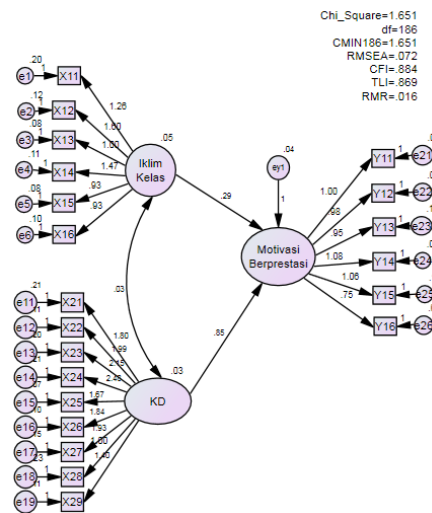

Figure 2.   Initial Factor Model of Latent Variabels

The result of the factor analysis beginning shows that there are indices that do not meet the cut off value. Modifications made some errors influence of variables that have a value large change Chi-square. The modification result then re-analyzed by the results in Figure3.
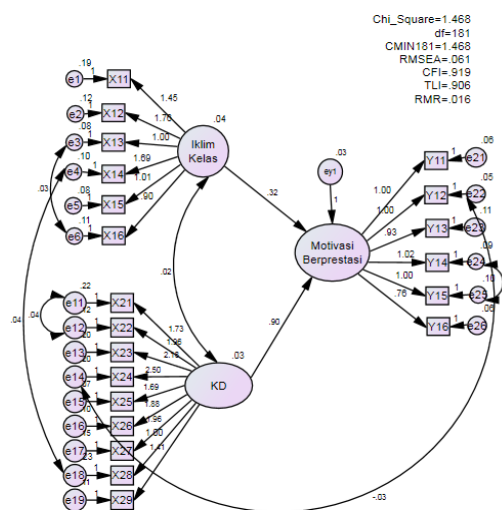

Figure 3.   Final Factor Model of Latent Variabels

The final result can be seen that all the indexes have met the criteria so that these models can be received and analyzed further. Standardized regression weights can also show the influence of latent variables with the indicators.

Table 10. Bobot Regression Weights Of Latent Variables

			Estimate	S.E.	C.R.	P
X13	<---	Class Climate	1.000			
X12	<---	Class Climate	1.802	.312	5.774	***
Y11	<---	Achievement Motivation	1.000			
Y12	<---	Achievement Motivation	.964	.114	8.425	***
Y13	<---	Achievement Motivation	.921	.136	6.793	***
Y14	<---	Achievement Motivation	1.041	.134	7.759	***
Y15	<---	Achievement Motivation	1.000	.140	7.141	***
X14	<---	Class Climate	1.712	.285	6.002	***
X11	<---	Class Climate	1.462	.280	5.221	***
X15	<---	Class Climate	.905	.193	4.688	***
X16	<---	Class Climate	.863	.159	5.417	***
Y16	<---	Achievement Motivation	.741	.105	7.082	***
X28	<---	Self-Concept	1.000			
X27	<---	Self-Concept	1.753	.434	4.043	***
X26	<---	Self-Concept	1.704	.386	4.418	***
X25	<---	Self-Concept	1.499	.357	4.196	***
X24	<---	Self-Concept	2.223	.552	4.026	***
X23	<---	Self-Concept	2.030	.505	4.021	***
X21	<---	Self-Concept	1.615	.424	3.810	***
X29	<---	Self-Concept	1.268	.323	3.925	***
X22	<---	Self-Concept	1.740	.446	3.902	***

4. *Model Verification and Final Model Development*

Verified the theoretical model developed based on empirical data. An analysis of the picture 3 is the structural equation model of initial stages.
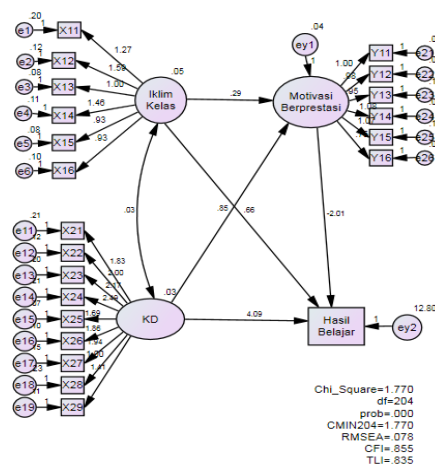

Figure 4.   Structural Equation Model of Initial Stages

The results of the analysis of the initial stages in figure 4 shows that there are indices that do not meet the cut off value. Modifications made some errors influence of variables that have a value large change Chi-square. The modification result then re-analyzed by the results in Figure 5.
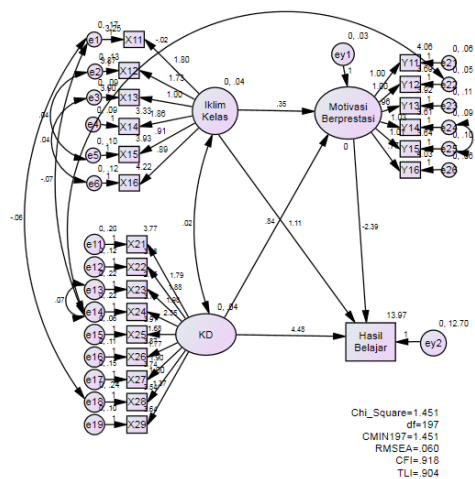
Figure 5. Structural Equation Model of Final Stages

In the final result can be seen that all the indexes have met the criteria so that these models can be received and analyzed further. Parameter of regression weighted shown in the table 11 below.

Table 11. Regression Weight Of Final Model

			Estimate	S.E.	C.R.	P
Achievement Motivation	<---	Self Concept	.844	.268	3.149	.002
Achievement Motivation	<---	Class Climate	.346	.173	2.006	.045
Physics Learning Result	<---	Self Concept	4.481	3.483	1.286	.198
Physics Learning Result	<---	Achievement Motivation	-2.385	2.212	-1.078	.281
Physics Learning Result	<---	Class Climate	1.111	2.682	.414	.679

B. *Discussion*

1. The Direct Influence of Class Climate towards Physics Learning Result.

For the first hypothesis testing showed that the influence variables of calss climate towards physics learning result described in the regression weights of final model with the estimate results γ_{x1y2} = 1.111 with *p* value = 0.679 > 0.05. This means that H_0 accepted and H_1 rejected at the significance level 0.05. This result indicates that the class climate does not have positive direct influence and significant towards physics learning result.

a) The Direct Influence of class climate towards Achievement Motivation

For the second hypothesis testing showed that the influence variables of class climate towards achievement motivation described in the regression weights of final model with the estimate results γ_{x1y1} = 0.346 with *p* value = 0.045<0.05. This means that H_0 rejected and H_1 accepted at the significance level 0.05. This result indicates that class climate have positive direct influence and significant towards achievement motivation.

b) The Direct Influence of Self Concept towards Physics Learning Result

For the third hypothesis testing showed that the influence variables of self concept towards physics learning result described in the regression weights of final model with the estimate results γ_{x2y2} = 4.481 with *p* value = 0.198 > 0.05. This means that H_0 accepted and H_1 rejected at the significance level 0.05. This result indicates that self concept does not have positive direct influence and significant towards physics learning result.

2. The Direct Influence of Self Concept towards Achievement Motivation

For the fourth hypothesis testing showed that the influence variables of self concept towards achievement motivation described in the regression weights of final model with the estimate results γ_{x2y1} = 0.844 with *p* value = 0.002 < 0.05. This means that H_0 rejected and H_1 accepted at the significance level 0.05. This result indicates that self concept has positive direct influence and significant towards achievement motivation.

3. The Direct Influence of Achievement Motivation towards Physics Learning Result

For the fifth hypothesis testing showed that the influence variables of achievement motivation towards physics learning result described in the regression weights of final model with the estimate results β_{y1y2} = -2.385 with *p* value = 0.281 > 0.05. This means that H_0 accepted and H_1 rejected at the significance level 0.05. This result indicates that achievement motivation does not have positive direct influence and significant towards physics learning result.

IV. CONCLUSION AND SUGGESTION

The results showed that: 1) the class climate does not have positive direct influence and significant towards physics learning result; 2) class climate has positive direct influence and significant towards achievement motivation; 3) the self-concept does not have positive direct and significant towards physics learning result; 4) self-concept has dpositive direct influence and significant towards achievement motivation, and 5) the achievement motivation has positive direct influence and significant towards physics learning result.

Based on the research results obtained, it is advisable that matters; 1)To the schools to be more looking for in-depth information about the factors that affect physics learning result students so they can be followed up quickly in order to improve learning result of students; 2)To the researcher and observer of education, based on research findings, especially some of the research hypotheses are inconsistent with the facts in theory then presumably there is further research related to the research that explore patterns of relationships between variables and look for indirect relations between the latent variables to learning result

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