THE INFLUENCE OF TEACHER PEDAGOGICAL COMPETENCE AND EMOTIONAL INTELLIGENCE TOWARDS MOTIVATION AND PHYSICS LEARNING RESULT OF STUDENT AT XI IPA GRADE SMA NEGERI 1 WATANSOPPENG

Kaharuddin Arafah[1], Adnani Yuni[2], Muris[3]

[1]Lecturer at Phisycs Education Post Graduate Program, State University of Makassar
[2]Student at Phisycs Education Post Graduate Program, State University of Makassar
[3]Lecturer at Phisycs Education Post Graduate Program, State University of Makassar
ayuni2092@gmail.com, eltigakahar@yahoo.com

Abstract - This research is expost facto which aims to determine the influence: i) the teacher pedagogical competence towards physics learning result; ii) emotional intelligence towards physics learning result; iii) the teacher pedagogical competence towards achievement motivation; iv) emotional intelligence towards achievement motivation; and v) achievement motivation towards physics learning result. The populations in this study were all students of XI IPA SMAN 1 Watansoppeng as many as 175 students. The process of collecting data using questionnaires and tests of physics learning outcomes that have been tested empirically. Data of the research result were by using analysis method of Structural Equation Modeling (SEM) with technique of Analysis of Moment Structural (AMOS). The analysis procedure is performed with descriptive analysis and inferential analysis, factor analysis and verification of structural model AMOS. Through the model can be concluded that: i) the teacher pedagogical competence doesn't have positive direct influence and significant toward physics learning result; ii) emotional intelligence doesn't have positive direct influence and significant toward physics learning result; iii) the teacher pedagogical competence has positive direct influence and significant toward achievement motivation; iv) emotional intelligence has positive direct influence and significant toward achievement motivation; and v) achievement motivation has positive direct influence and significant towards physics learning result.

Keywords: *ekspost facto, pedagogic competence, emotional intelligence, achievement motivation, physics learning result*

I. INTRODUCTION

Education in all off country has a purpose which is to the intellectual life of the nation. So even with education in Indonesia. One indicator of the success of our education that increase learning result. In terms of improving learning outcomes it is necessary to examine the factors that could theoretically affect learning result. Had many previous studies that have found several factors either directly or indirectly to influence the improvement of learning resultof students.

A lot of factors that can influence both internal factors and external factors. In terms of the factors of the learners most fundamental closely connected with the study results regarding its intelligence or intelligence factor, which relates to the behavior that plays a role in encouraging children to achieve, it is emotional intelligence.

Daniel Goleman in his book "Emotional Intelligence" write some indicators of emotional intelligence each building/give a positive relationship to the learning result, including self-motivated and able to build relationships with others. Learners are able to motivate themselves in terms of learning would make it viable to learn and believe with the results obtained. So even with the ability to build relationships with others, learners not being perfect so it must need help or cooperation with each other. In the case of learners who have a high EQ will be good at

building good relationships with friends so that they can complement each other/one another hang if there is thought to be less of each other. emotional intelligence has a relationship with the motivation and learning results.

There are many factors of the learner, the learning outcomes are also influenced by some external factors. The external factors that relate directly to the activities of learners that is a factor of teachers as learners, in this case the researchers took particular aspects of teacher competence pedagogic competence.

Teacher competence is needed in teaching and learning. In general, the teachers meet two categories, capability and loyalty. Capability is meant is that the teacher must have the ability in the field of science that teaches, has a theoretical capability of good teaching, from planning, implementation and evaluation. And that meant loyalty is loyalty teacher, which is loyal to the tasks not only in the classroom, but the pre-service or out servicing. Gilbert H. Hunt in his book "Effectively Teaching" (Rosyada, 2004).

Based on Government Regulation (PP) No. 16 of 2007 on teachers, there are many competencies that must be mastered by the teacher. One of them is the pedagogical competence. Under Article 28, paragraph 3 (a), pedagogic competence is the ability to manage learning of learners that includes an understanding of the learners, the design and implementation of learning, evaluation of learning outcomes, and the development of learners to actualize various potentials.

Pedagogical competence of teachers is absolutely necessary for successful learning and improving the quality of education. Without pedagogic, learning and education process will only road in place, there are no signs of improving the quality of education quality.

The success of student learning is part of the impact of teacher competence and skills in the learning process. The success of student learning are usually seen from the quality or changes shown students after participating in learning, so it can be assessed by the extent to which students' learning needs can be met optimally by the teacher. Thus the rationale encourage researchers to conduct research on the influence of teachers' pedagogical competence and emotional intelligence on achievement motivation and physics learning result of students at grade XI IPA SMAN I Watansoppeng. The problems in this research are: (1) Does emotional intelligence have positive direct influence towards achievement motivation? (2) Does emotional intelligence have positive direct influence towards physics learning result? (3) Does the teacher pedagogical competence have positive direct influence towards achievement motivation? (4) Does the teacher pedagogical competence have positive direct influence towards physics learning result? (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 emotional intelligence towards achievement motivation, (2) to determine the direct influence of emotional intelligence towards physics learning result, (3) to determine the direct influence of teacher pedagogical competence towards achievement motivation, (4) to determine the direct influence of teacher pedagogical competence towards physics learning result, and (5) to determine the direct influence of learning motivation towards physic learning result. The results of this study are expected to provide good benefits for students, teachers, schools and other researchers. For students, this study can provide input to further improve learning result. For teachers, this research as information can provide a positive discourse. For schools, this research can be used as information material in improving the teaching competence of teachers. As for other researchers, this study can be used as reference for further research, especially research that focuses on internal factors on students to subjects Physics.

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 teacher pedagogical competence (X_2) and emotional intelligence (X_1) on physics learning result (Y_2) as dependent variables, both directly and through the achievement motivation (Y_1) as an intervening variable. Designs of linkages between these variables are described as follows.
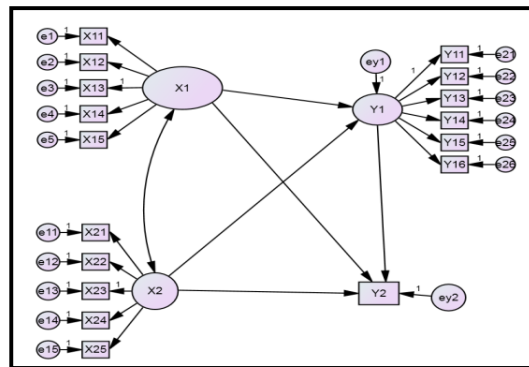
Figure 1. Structural Model of Functional Interwoven Proposed Among Variables Research

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

Table 1. Distribution of Student Class XI IPA SMA Negeri 1 Watansoppeng

Class	Number of Student
XI IPA 1	33
XI IPA 2	35
XI IPA 3	34
XI IPA 4	34
XI IPA 5	35
Total	171

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

Class	Sample
XI IPA 2	31
XI IPA 3	30
XI IPA 4	31
XI IPA 5	31
Total	123

The instrument used in this study consisted of questionnaire of the teacher pedagogical competence, emotional intelligence 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
Teacher Pedagogical Competence	Interval	Questionnaire	Students	Questionnaire of Teacher Pedagogical Competence
Emotional Intelligence	Interval	Questionnaire	Students	Questionnaire of Emotional Intelligence
Achievement Motivation	Interval	Questionnaire	Students	Questionnaire of Achievement Motivation
Physics Learning Result	Interval	Questionnaire	Students	Questionnaire of Physics 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 sig.Linearity < 0.05.

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	Teacher Pedagogical Competence	Emotional Intelligence	Achievement Motivation	Physics Learning Result
Number of respondent	123	123	123	123
Number of item	34	33	40	26
Mean	122.9187	130.7073	133.8618	11.1382
Std. Error of Mean	1.09429	.94784	1.73110	.40838
Median	123.0000	131.0000	134.0000	11.0000
Mode	127.00	130.00[a]	152.00	10.00
Std. Deviation	12.13624	10.51208	19.19884	4.52919
Variance	147.288	110.504	368.595	20.514
Skewness	-.020	-.548	-.163	.424
Std. Error of Skewness	.218	.218	.218	.218
Kurtosis	-.451	.868	-.370	.280
Std. Error of Kurtosis	.433	.433	.433	.433
Range	57.00	59.00	92.00	22.00
a. Multiple modes exist. The smallest value is shown				

Research result data of variable the teacher pedagogical competence then presented the list of frequency distribution as shown in table 5 below.

Table 5. Distribution of Frequency, Percentage, and Categories
for Teacher Pedagogical Competence

Interval Score	Category	Frequency	Percentage (%)
34,00 – 51,60	Very Low	0	0
51,70 – 78,50	Low	0	0
78,60 – 105,40	Moderate	3	2,44
105,50 – 132,30	High	67	54,47
132,40 – 170,00	Very High	53	43,09
Total		122	123

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

Table 6. Distribution of Frequency, Percentage, and Categories for Emotional Intelligence

Interval Score	Category	Frequency	Percentage (%)
33.00 - 59.80	Very Low	0	0
59.90 - 85.80	Low	0	0
85.90 - 111.80	Moderate	22	17,88
111.90 – 137.80	High	87	70,73
137.90 – 165.00	Very High	14	11,38
Total		123	100

Research result data of variable the achievement 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

Interval Score	Category	Frequency	Percentage (%)
40,00 – 72,40	Very Low	0	0.00
72,50 – 104,40	Low	11	8,94
104,50 – 136,40	Moderate	56	45,53
136,50 – 168,40	High	52	42,28
168,50 – 200,00	Very High	4	3,25
Total		123	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 Learning Result

Interval Score	Category	Frequency	Percentage (%)
0.0 – 5.6	Very Low	14	11.38
5.7 - 10.8	Low	44	35.77
10.9 – 16.0	Moderate	53	43.00
16.1 – 21.2	High	8	6.50
21.3 – 26.0	Very High	4	3.25
Total		123	100

B. Analysis Prerequisites Test

1. 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 2.262 < 2.58 which means multivariate distribution is normal.

2. Linearity Test

Based on the results of linearity test the influences of X1 with Y2 have sig Linearity 0.000. For the influence of X_2 with Y_2 have sig Linearity 0.000. As for the influence of Y_1 with Y_2 have a sig Linearity 0.000. This means that the value of sig Linearity less than 0.05 (0.000 < 0.05). So it can be concluded that the influence of variable emotional intelligence with physics learning result, the influence teacher pedagogical competence with physics learning result and achievement motivation with physics learning result are linear and are eligible for further analysis.

3. Multicolinearity Test

Table 9. The Result of Multicolinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
Emotional Intelligence (X_1)	0.713	1.403
Teacher Pedagogical Competence (X_2)	0.794	1.260
Achievement Motivation (Y_1)	0.596	1.678

Dependent Variable: Physics Learning Result (Y_2)

C. Factor Analysis

   1.   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.
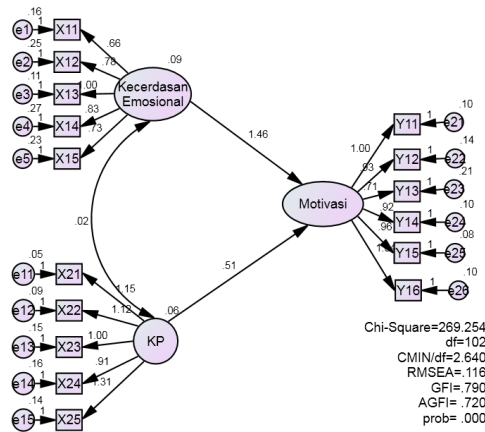

Figure 2. Initial Factor Model of Latent Variabels

   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.
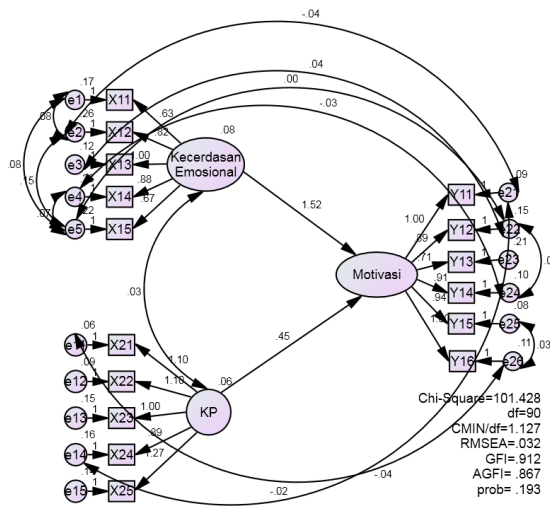

Figure 3. Final Factor Model of Latent Variabels

   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. Standardized Regression Weights of Latent Variables

			Estimate
X11	<---	X1	.582
X12	<---	X1	.778
X13	<---	X1	.578
X14	<---	X1	.567
X15	<---	X1	.852
X21	<---	X2	.744
X22	<---	X2	.675
X23	<---	X2	.532
X24	<---	X2	.496
X25	<---	X2	.660
Y11	<---	Y1	.876
Y12	<---	Y1	.704
Y13	<---	Y1	.617
Y14	<---	Y1	.785
Y15	<---	Y1	.847
Y16	<---	Y1	.815

2. Model Verification and Final Model Development

Verified the theoretical model developed based on empirical data. An analysis of the Ficture3 is the structural equation model of initial stages.
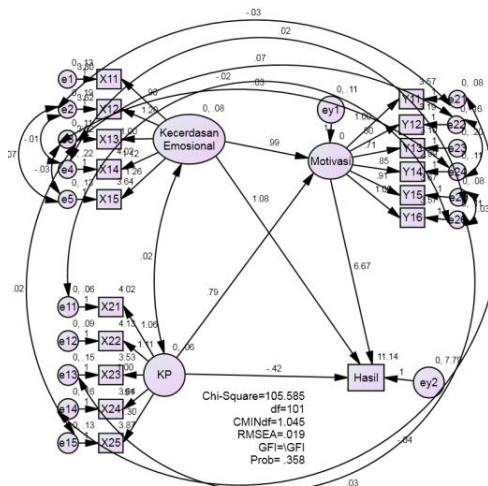

Figure 4.   Structural Equation Model of Initial Stages

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.
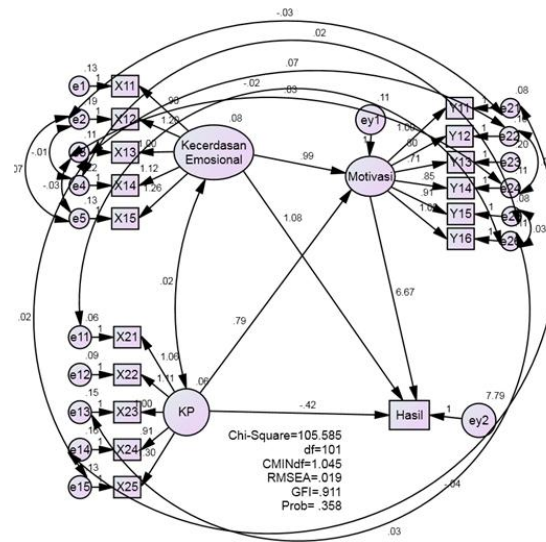
Figure 5. Structural Equation Model of Final Stages

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 10 below.

Table 11. Regression Weight of Final Model

			Estimate	S.E.	C.R.	P
Y1	<---	X1	.986	.186	5.290	***
Y1	<---	X2	.789	.212	3.726	***
Y2	<---	Y1	6.672	1.066	6.260	***
Y2	<---	X2	-.420	1.612	-.261	.794
Y2	<---	X1	1.084	1.567	.692	.489

Structural model is obtained based on the index overall fit can be seen in table 10. Mathematically structural equation model can be written:

$$\hat{Y} = 11.138 + 1.084X_1 - 0.42X_2 + 6.672Y_1 \qquad R^2 = 66\%$$

D. Discussion

1. The Direct Influence of emotional Intelligence towards Achievement Motivation

For the fourth hypothesis testing showed that the influence variables of interpersonal intelligence towards learning motivation described in the regression weights of final model with the estimate results γ_{x2y1} = 0.567 with *p* value = 0.000 < 0.05. This means that H_0 rejected and H_1 accepted at the significance level 0.05. This result indicates that emotional intelligence has positive direct influence and significant towards achievement motivation.

2. The Direct Influence of emotional Intelligence towards Physics Learning Result

For the second hypothesis testing showed that the influence variables of interpersonal intelligence towards physics learning result described in the regression weights of final model with the estimate results γ_{x2y2} = 0.070 with p value = 0.489 > 0.05. This means that H0 accepted and H1 rejected at the significance level 0.05. This result indicates that emotional intelligence does not have positive direct influence and significant towards physics learning result.

3. The Direct Influence of Teacher Pedagogical Competence towards Achievement Motivation

For the third hypothesis testing showed that the influence variables of teacher professional competence towards learning motivation described in the regression weights of final model with the estimate results γ_{x1y1} = 0.387with *p* value = 0.000 < 0.05. This means that H_0 rejected and H_1

accepted at the significance level 0.05. This result indicates that teacher pedagogicall competence has positive direct influence and significant towards achievement motivation.

4. The Direct Influence of Teacher Pedagogical Competence towards Physics Learning Result.

For the first hypothesis testing showed that the influence variables of teacher professional competence towards physics learning result described in the regression weights of final model with the estimate results γ_{x1y2} = -0.023 with p value = 0.794 > 0.05. This means that H_0 accepted and H_1 rejected at the significance level 0.05. This result indicates that the teacher pedagogical competence does not have positive direct influence and significant towards physics learning result.

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

For the fifth hypothesis testing showed that the influence variables of learning motivation towards physics learning result described in the regression weights of final model with the estimate results β_{y1y2} = 0.749 with p value = 0.000 < 0.05. This means that H_0 rejected and H_1 accepted at the significance level 0.05. This result indicates that achievement motivation has positive direct influence and significant towards physics learning result.

IV. CONCLUSION AND SUGGESTION

The results showed that: 1) emotional intelligence has positive direct influence and significant towards achievement motivation; 2) emotional intelligence does not have positive direct influence and significant towards physics learning result; 3) the teacher pedagogical competence has positive direct and significant towards achievement motivation; 4) the teacher pedagogical competence does not have positive direct influence and significant towards physics learning result, 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) For teachers to better understand the psychological factors that can affect the results of students; 2) for students to further develop the factors that was in him to get the optimal learning results; 3) For researchers interested in developing further this research, is expected to examine the limitations in this study, so further research can enhance this research.

REFERENCES

[1] Goleman, D. (2004). *Emotional Intelligence (terjemahan)*. Jakarta: PT Gramedia Pustaka Utama.

[2] Rosyada, D. (2004). *Paradigma Pendidikan Demokratis*. Jakarta: Prenada Media

[3] Hamalik, O. (2001). *Proses Belajar Mengajar*. Jakarta: PT Bumi Aksara.

[4] Undang-undang Nomor 16 Tahun 2007 Tentang Standar Kualifikasi Akademik dan Kompetensi Guru