

The Effect of Evaluating Student Learning Outcomes on National Exam Scores with Final School Exams as an Intervening Variable

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Keywords: Daily Test, Evaluation, Final School Exam, National Examination, Midterm Test, Path Analysis, Task.

Abstract: The purpose of this study was to examine the relationship between evaluating student learning outcomes conducted by teachers in State High Schools in Palopo City and National Examinations held by the government nationally. The study also aims to determine whether the final school exam mediates the relationship between the evaluation of learning outcomes and national examinations. The data used in this study were obtained from the documentation of the State High School in Kota Palopo in the 2016/2017 academic year consisting of 6 (six) schools with a total of 1,631 students. Sampling is done by using the Probability Sampling Stratified Random Sampling technique. The sample used was 321 students. Data is processed using Path analysis techniques. The results of this study indicate that the evaluation of student learning outcomes consisting of tasks, daily tests, midterm tests and final school exams affect the score of national exams directly and simultaneously, but not all evaluation outcomes of learning outcomes partially affect the score of national examinations. while the relationship between evaluating student learning outcomes is not all mediated by the Final School Exam.

1 INTRODUCTION

Palopo City, one of the cities in the province of South Sulawesi, continues to strive to improve the quality of education. Morris Kline in LisnawatiSimanjuntak stated that "the ups and downs of countries today depend on progress in the field of mathematics" (LisnawatiSimanjuntak, 1993). But this year, the average score of the national examination (UN) level of South Sulawesi's academic year 2017 decreased from the previous year. This was acknowledged by the South Sulawesi Education Office, IrmanYasinLimpo, Thursday (Rakyatku, 2017). In 2014, the national examination average for high school in Palopo City was ranked the 4th highest in South Sulawesi Province, while this year, Palopo city was not included in the top 5 list. The decline in the average national exam scores of high school students is certainly something that needs to be studied more deeply, given that national exams are one indicator of the success of the teaching and learning process.

In the teaching and learning process, especially in the evaluation of learning outcomes, both those carried out by the teacher in the form of daily

assignments and tasks, carried out by schools such as Midterm Test (UTS) and Final School Exam (UAS) and those conducted by the government in the form of National Examinations through several stages. The stages of evaluation with one another correlate and form a causal relationship that has a pattern of direct or indirect relationships.

Based on the observations, the scores of the national exam is determined by several variables such as: Tasks, Daily Tests, and Final School Exam. These variables form the structure of relationships between variables. The relationship between these variables is a correlation and regression relationship in the form of direct or indirect relationships.

Evaluation of learning outcomes is carried out continuously to monitor the process, progress and improvement of results in the form of Tasks, Daily Tests, Midterm Tests, Final School Exams, and National Exams. Assignments are given to students at the end of the learning meeting. Daily tests can be done if you have completed one or several indicators or one basic competency, while the final school exam is done after completing some basic semester competencies in question. National exams are carried out nationally at the level of elementary and secondary education at the end of the school year to

find out the extent of students' ability to handle all the material that has been learned.

The research conducted by IkhsanJailani stated that there was no significant positive relationship between semester national exams and national examinations (Jailani, 2015), while according to FitriYunita in her research results stated that there was a significant correlation between final school exam scores and national examinations(Yunita, 2014). The results of the research by Siti Harlian have a very strong positive correlation between the formative test scores and the semester exam scores (harlian, 2013).Formative tests in school experience are equated with daily tests because formative tests are carried out at the end of each. material. According to FadliHidayat, PujiNugraheni, and Budiyo in the results of their research stated there was a positive and significant relationship between UTS with UAS(Hidayat, Nugraheni, & Budiyo, 2013). Based on several studies above, it can be concluded that daily tests affect the midterm exam. The final school exam also influences the national exam. Whereas the midterm exam does not influence national exams. But the midterm exam influences the final school exam.

This study will examine the contribution of evaluation of learning outcomes conducted in Palopo City Senior High Schools in the form of assignments, daily tests, midterm tests on the national exam scores directly, and through Final School Exams as intervening variable.

2 RESEARCH METHODS

This type of research is ex post facto research with descriptive quantitative approach. Student value data was taken from 6 schools in Palopo District, 312 students from 1,631 students. Sampling was done by Probability Sampling technique in the Proportionate Stratified Random Sampling type in 6 schools, namely SMA 1 Palopo, SMA Negeri 2 Palopo, SMA Negeri 3 Palopo, SMA Negeri 4 Palopo, SMA Negeri 5 Palopo, and SMA Negeri 6 Palopo. The data obtained will be analyzed using Path Analysis. In the structural equation model, this study has exogenous variables, endogenous variables, and intervening variables. Exogenous variables are variables that are not influenced by previous variables (antecedents), while endogenous variables are variables that are influenced by previous variables. Exogenous variables in this study are evaluation of student learning outcomes and their endogenous variables are national examinations. There is one variable that has an antecedent variable

(previous variable) and consequent variable (variable afterward) in the equation model, namely the final school exam which is then referred to as the intervening variable. The steps to test path analysis (Path Analysis) 1. Determine the paradigm of relationships between variables; 2. make a path diagram model; 3. determine the path coefficient and the structure equation (Subana, Rahadi, & Sudrajat, 2000).

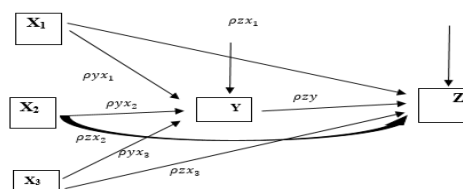


Figure 1: Structural Relationships Variable X1, X2, X3 and Y to Z

- Hypothesis Model 1:

Tasks, daily tests and midterm replications directly influence the school final exam

Sub-Structure 1:

$$Y = \rho_{y_1}x_1 + \rho_{y_1}x_2 + \rho_{y_1}x_3 + \rho_{y_1}\epsilon_1$$

- Hypothesis Model 2:

Task, daily test, midtermtestand final school exam have a direct effect on national examination

Sub-Structure 2:

$$Y = \rho_{zx_1}x_1 + \rho_{zx_2}x_2 + \rho_{zx_3}x_3 + \rho_{zy}y_1 + \rho_{z}\epsilon_2$$

- Hypothesis Model 3:

Task, daily tests and midterm replications have a total effect on national exams through final school exams.

Sub-Structure 3:

$$Y = \rho_{zy_1}x_1 + \rho_{zy_1}x_2 + \rho_{zy_1}x_3 + \rho_{y}\epsilon_2$$

3 RESULTS AND DISCUSSION

3.1 Descriptive Statistics

The results of the descriptive statistics with SPSS 22 program are obtained as follows;

Table 1: Descriptive Statistics

	UN	US	UTS	UH	Tgs	Valid N (listwise)
N	321	321	321	321	321	321
Range	82.50	74.00	35.00	38.00	31.00	
Min.	12.50	24.00	65.00	60.00	67.00	
Max	95.00	98.00	100.00	98.00	98.00	
Mean	455.2	841.5	829.01	834.2	851.4	

Std. Deviation	1509.4	653.6	542.31	604.6	507.5	
Variance	22.783	42.72	2.941	3.656	25.7	
Skewness	.341	-2.402	.436	-.588	-.369	
Kurtosis	-.159	22.627	.790	1.378	1.230	

3.2 Analysis Requirements

Testing with ANOVA statistics requires that the analyzed data come from the population with normal distribution and the variance between sample groups must be homogeneous. For this reason, normality and homogeneity tests were carried out. Normality test uses the Lilliefors test, while homogeneity uses the Bartlett test.

3.2.1 Normality Test

The results of the normality test with SPSS 22 program are obtained as follows;

Table 2: Data Normality Test

	Tgs	UH	UTS	UAS	UN
N	321	321	321	321	321
Normal Mean	85.14	83.43	82.9	84.34	44.73
Parameter Std. Deviation	5.076	6.046	5.43	6.493	14.81
Most Absolute	.087	.108	.097	.118	.077
Extreme Positive	.063	.052	.097	.092	.077
Differences Negative	-.087	-.108	-.087	-.118	-.048
Test	.087	.087	.108	.097	.118
Asymp. Sig. (2-tailed)	.000c	.000c	.000c	.000c	.000c

Ho: Data normally distributed

Ha: Data not normally distributed

Basic decision making is based on probability. If the probability value > 0.05 then Ho is accepted

If the probability value is ≤ 0.05 then Ho rejected

Kolmogorov-Smirnov results above, the task is 0.087 which means > 0.05 then the data is normally distributed. Daily Test Rate is 0.108 which means > 0.05 , the data is normally distributed. Midterm test (UTS) is 0.097 which means > 0.05 , the data is normally distributed. The Final School Exam Value is 0.118 which means > 0.05 , the data is normally distributed. National Examination Value is 0.77 which means > 0.05 , the data is normally distributed. So that the sample data coming from the population are normally distributed.

3.2.2 Linearity Test

Test aims to determine whether two variables have a significant linear relationship or not. Linearity test results obtained in the following tables;

Table 3: Summary of results of Linearity Test

Effect of Variables	Sig. Value	Ket.
Tgs (X1) to UAS (Y)	0,945Test	Linear
UH(X2) to UAS (Y)	0,001	Not linear
UTS (X3) to UAS (Y)	0,595	Linear
UAS (Y) to UN (Z)	0.063	Linear
Tgs (X1) against UN (Z)	0.001	Not linear
UH (X2) against UN (Z)	0.001	Not linear
UTS (X3) against UN (Z)	0.079	Linear

It can be concluded that Tasks and UTS have a linear relationship with UAS. In addition, UTS also has a linear relationship with the UN. While Daily test does not have a linear relationship with the (UAS) and National Examination. Likewise, Daily Tests with the UN do not have a linear relationship. so that it is tested to find the right model.

3.2.3 Model Test

Testing aims to determine the right model used to analyze research data. The test results of the table model above show that the right model is a quadratic model with the highest R-square value with a contribution of 26.0%.

Based on the test results of the models of the three relations of the three variables in Table 4 it can be concluded that the right model used is a quadratic model non-linear regression.

3.2.4 Quadratic

Test A quadratic test is a non-linear regression which aims to determine the relationship between the dependent variable (Y) and the independent variable (X) so that a curve that forms an ascending curved line ($\beta_2 > 0$) or decreases ($\beta_2 < 0$) will be obtained (Yusnandar, 2004). So that nonlinear data will be tested for non-linear quadratic models as in Table 5.

Table 4: Summary of Model Test Results

Variable	R Square						tests used were
	Linear	Logarithmic	Inverse	Quadratic	Cubic	Compound	
UH- UAS	0.061 6.1%	0.061 6.1%	0.059 5.9%	0.062 6.2%	0.061 6.1%	0.028 2.8%	Quadratic 6.2%
Tgs- UN	0.215 21.5%	0.208 20.8 %	0.198 19.8%	0.232 23.2%	0.230 3.0%	0.229 22.9%	Quadratic 23.2%
UH- UN	0.237 23.7%	0.225 22.5%	0.210 21.0%	0.260 26.0%	0.258 5.8%	0.256 25.6%	Quadratic 26.0%

Table 5: Summary of Quadratic Test Results

Influence of variables	Value	Value of path coefficients	Sig. Value	Remark
UH (X2) to UN (Z)	Height	0.227	0.001	Influence
	Low	0.180	0.064	No effect
Tgs (x1) on UN (Z)	Height	0.465	0.000	Influence
	Low	0.085	0.384	No effect on
UH (X2) on UN (Z)	Height	0.421	0.000	Influence
	Low	0.146	0.134	No effect

Table 6: Multicollinearity Test Results of Task Value Data, UH, UTS, and UAS against UN

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Tgs Value	.459	.234	.157	1.961	.051
UH Value	.704	.190	.288	3.697	.000
UTS	.330	.162	.121	2.033	.043
US value	.116	.116	.051	.996	.320

3.2.5 Multicollinearity Test Multicollinearity

Aims to test whether the regression model found correlation between independent variables. A good regression model should not have a correlation between the independent variables (not multicollinearity). Based on the results of the data processing by the SPSS Version.22 Program it is known that the tolerance value of the Tgs(X1), UH (X2), UTS (X3) successive variables is 0.369; 0.382 and 0.666 greater than 0.10. Meanwhile, the VIF values of Tgs (X1), UH (X2), UTS (X3) variables were 2.710, 2.616 and 1.501 respectively, which means less than 10.00. So, it can be concluded that there is no Multicollinearity.

Based on Table 6 output is known that the value of the variable tolerance Instructions (X1), UH (X2), UTS (X3) and UAS (Y) in a row of 0.359; 0,382; 0.653 and 0.886 greater than 0.10. Meanwhile, the VIF values of the Tgs (X1), UH (X2), UTS (X3) and UAS (Y) variables were 2.783; 2,617; 1,526 and 1,129 which means less than 10.00. So, it can be concluded that there is no multicollinearity.

3.3 Research Hypothesis Test through Path Analysis

3.3.1 Section Titles

To determine the path coefficients in this one sub-structure, the researcher previously showed Figure 6 which is a picture of Sub-Structure one, taken from Figure 5. Sub Structure one is the direct relationship between Task and Daily Test with Midterm Test (UTS).

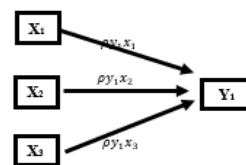


Figure 2: Sub Structure One direct relationship Tgs, UH, and UTS with UAS

- Test Overall Hypothesis Testing Hypothesis Testing Data test as a whole as follows:

Table 7: Summary Model

R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
			R Square Change	Change	df1	df2	
0.114	0.106	6.141	0.114	13.59	3	317	.000

Ho: Tgs, UH, UTS no direct influence UAS.
 Ha: Tgs, UH, UTS directly influence UAS.

The Table 7 above shows the calculated F value of 13.590 with a probability value (sig) = 0.000. Because the sig value is 0.000 < 0.05, then Ho is rejected, Task, Daily Test, UTS influences UAS. Therefore, individual testing can be carried out or continued.

• Hypothesis Testing Individually

The results of individual hypothesis testing are shown in the table as follows:

Table 8: Tgs, UH, and UTS Regression Coefficients on UAS

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	44,396	6,275	7,076	.000	(Constant)
Tgs	.111	.254	.324	2.913	.004
UH	-.032	.092	-.030	-.345	.730
UTS	.078	.151	.180	2.328	.021

Ho: Tgs do not have a direct effect on the UAS
 Ha: Tgs have a direct effect on UAS;

The table above obtained a beta value of 0.254 and a sig value of 0.004 < 0.05, so Ho was rejected, meaning that the task had a direct effect on the UAS

Ho: UH had no direct effect on the UAS.

Ha: UH has a direct effect on UAS.

From Table 8, the beta value is -0.030 and the sig value is 0.730 < 0.05, so Ho is accepted. This means that Deuteronomy does not have a direct effect on UAS

Ho: UTS does not have a direct effect on UAS

Ha: UTS has a direct effect on UAS.

From Table 8 above, the beta value is 0.151 and the sig value is 0.021 < 0.05, Ho is rejected. This means that UTS has a direct effect on UAS.

So, it can be concluded that the task has a direct effect on the UAS value. While Daily test does not directly affect the value of UAS and UTS directly affects UAS.

a. Hypothesis Testing Sub Two Structure

To determine the path coefficients in these two previous sub-structures the researcher shows Figure 3 which is part of Figure 1 Sub Structure two is a direct relationship between Tgs, UH, UTS and UAS.

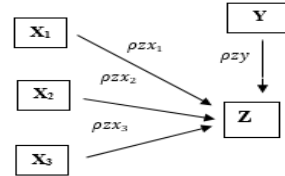


Figure 3: Sub Structure of two direct relationships Task, Daily Test, UTS, and UAS with UN

Test Overall Hypothesis Testing The results of the overall data test are as follows:

Table 9: Summary Model

R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
			R Square Change	Change	df1	df2	
0.269	0.260	12.737	0.269	29.04	4	316	.000

Ho: Tgs, UH, UTS and UAS do not directly affect the UN

Ha: Tgs, UH, UTS and UAS directly influence the UN

From the Table 9, the calculated F value is 29.039 with a probability value (sig) = 0.000. Because the sig value is 0.000 < 0.05, Ho is rejected. This means that Task, Daily Tests, UTS, and UAS affect the National Examination. Therefore, individual testing can be carried out or continued.

• Hypothesis Testing Individually Tests

Based on the results of the linearity test shows that Daily Task and do not have a linear relationship so there is no individual hypothesis testing, while the UTS and UAS have linear relationships then the individual hypotheses will be tested as shown in the table as follows:

Table 10: UTS regression coefficient of the UN

Model	unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-40163	11768		-3.413	.001
UTS Value	1.024	.142	.375	7.229	.000

Ho: UTS has no direct influence on the UN

Ha: UTS direct impact on the UN

From Table 10, the beta value is 0.375 and the sig value is 0.000 < 0.05 so Ho is rejected. This means that UTS directly affects the National Examination.

From Table 11, the beta value is 0.205 and the sig value is 0.000 < 0.05, so Ho is rejected. This means that UAS directly affects the National Examination. So that it can be concluded that Task, Daily Test, UTS and UAS directly influence the National Examination.

X1 THP Y	0.254		0.254
X1t THP z	0.465	0.052	0.517
X2t THP Y	0.227		0.227
X2t THP z	0.421	0.046	0.467
X3 THP Y	0.151		0.151
X3 THP Z	0.375	0.030	0.715

The results of the above table, it can be seen that the direct effect of UTS on UAS by 0.375 and indirect influences of 0.030, which means that the direct effect is greater than the indirect effect, the results show that it directly has a significant influence on the National Examination.

Table 11: The regression coefficients of UAS to UN

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.335	0.566		.505	.614
	UAS	value	.467	.205	3.739	.000

Ho: UAS does not directly affect the National Examination.

Ha: UAS directly affects the National Examination.

3.3.2 Direct and indirect

Influences As for the direct and indirect influences of Tasks, Daily Tests, UTS, and UAS on the National Examination are as follows:

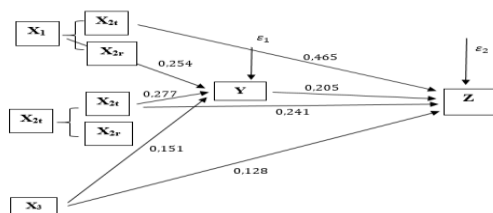


Figure 4: New diagram changes from the path diagram hypothesized

Table 12: Summary of the path coefficients Effect of Direct, indirect and total

Influence variables	Influence of Causal		
	Direct	Indirect (via y)	Total

3.4 Discussion of Research Results

3.4.1 The Influence of Tasks, Daily Tests, Middle test on School Final Exams

The Results of this study are not in accordance with the expectations of researchers who consider the value of Tasks, Daily Tests, Midterm test Examination to influence the National Examination. Previously, researchers had tested the normality of the sample data and obtained normal distribution data. Some of the three evaluations have no effect on the Final School Exam or on the National Examination, after being tested on the linearity test. The results in the field indicate that Daily test has no direct effect on the Final School Exam.

Task and Midterm test have a linear relationship to the Final School Exam. Next hypothesis testing. Hypothesis testing shows a beta value of 0.254 with a significant value of 0.000 < 0.05 for the task towards the final School Exam so that the Ho hypothesis is accepted. This means that the task directly influences the Final School Exam. Whereas the Midterm test towards the Final School Exam obtained a beta value of 0.151 with a significant value of 0.021 < 0.05 so that Ho accepted. This means that Midterm test directly affects the Final School Exam.

The results of this study, in line with previous research, especially on the evaluation of Midterm test on the Final School Exam by FadliHidayat, Budiyo, PujiNugraheni stated that there was a positive and significant relationship between the Midterm test and the Final Examination for School Mathematics subjects(Jailani, 2015). Likewise, the results of research by the researchers stated that there was a linear relationship between Midterm test and the Final School Exam. However, what is

different from the research of researchers is that it does not only show the relationship between Midterm test and the Final Examination of the School, but shows the relationship between Tasks, Daily Tests, and Midterm test towards the Final School Exam. So, this study is a research that shows whether there is an influence of Tasks, Daily Tests and Midterm test on the Final School Exam. Previous research was only on the relationship between Midterm test and the Final School Exam.

3.4.2 The Influence of Task, Daily Tests, Middle test on National Exams

The results of this study indicate that Daily Test and Deuteronomy does not affect the National Examination. These results are based on a linearity test that Deuteronomy Daily Tasks and not a linear relationship, so it is not continuous right on hypothesis testing. However, after testing the model, the exact model used was a quadratic model, so that after the quadratic test it was obtained that a high Daily Task and Deuteronomy had an effect on the National Examination.

This study is different from the previous research conducted by IkhsanJalali on mathematics subjects in Muhammadiyah I SMP Banda Aceh in 2013/2014, that there was no significant positive relationship between midterm exams and national exams(Jailani, 2015). Whereas the results of the research conducted by the researchers, that UTS has a direct influence on the national exam in the high school of Palopo city. So that in the city of Palopo especially the high school level needs to be implemented against UTS because it influences the National Examination.

3.4.3 The Influence of Tasks, Daily Tests, Middle test, and School Exams on National Exams through School Final Exams as intervening variables

The results of the study show that school exams affect national exams. This is based on linearity test that there is a linear relationship of UAS variables to the UN variable. In addition to the hypothesis test obtained a beta value of 0.375 with a significant value of $0.000 < 0.05$ so that the H_0 hypothesis is accepted, meaning that the Final Examination of the School directly affects the National Examination. This results in the indirect influence of Tasks, Daily Tests, Mid-Semester Exams, and school Examinations on National Exams through the Final School Exam as intervening variables.

The results are consistent with research conducted by Fitri Yunita against-IA class XII student of SMAN 8 Banda Aceh, that there is corella significant action between the school final exam scores of National Exam (yunita, 2014). Based on the results in table 4.13. the summary model shows that the R square task, daily tests, midterm test, and final school exam influence simultaneously that directly affects the National Examination at 0.285. This means that the contribution of Tasks, Daily Tests, Middle test, and final School Exam have a simultaneous effect which directly affects the National Examination is 26.9%, while the rest is influenced by other factors that cannot be explained in this study.

4 CONCLUSIONS

Based on the results and discussion with path analysis, we can conclude that the evaluation of student learning outcomes consisting of tasks, daily tests, midterm tests and final school exams affect the score of national exams directly and simultaneously, but not all evaluation outcomes of learning partially affect the score of national examinations. while the relationship between evaluating student learning outcomes is not all mediated by the final school exam. The contribution of evaluating student learning outcomes which is only 26.9% indicates that the evaluation of learning outcomes conducted by teachers and schools has not fully supported students to obtain the expected national exam scores.

REFERENCES

- Harlian, Siti. (2013). Korelasi Nilai Ujian Formatif Dengan Nilai Ujian Semester Dalam Mata Pelajaran IPA SDN 62 Banda Aceh. University Syiah Kuala | Electronic Theses and Dissertations.
- Hidayat, F., Nugraheni, P., & Budiyo. (2013). Hubungan Uts Dengan Uas Mata Pelajaran Matematika Siswa Sekolah Menengah Pertama Di Kecamatan Gombang. Program Studi Pendidikan Matematika, 6, 164–169.
- Jailani, I. (2015). Hubungan nilai ujian semester dengan nilai ujian nasional pada mata pelajaran matematika di SMP Muhammadiyah I Banda Aceh tahun pelajaran 2013/2014. Program Studi Pendidikan Matematika.
- L. Simanjuntak and Dkk, Metode Mengajar Matematika. Jakarta: PT Rineka Cipta, 1993.
- Rakyatku. (2017). Nilai Rata-rata Hasil UN Sulsel Turun.
- Subana, Rahadi, M., & Sudrajat. (2000). Statistik Pendidikan (Cet. I). Bandung: Pustaka Setia.
- yunita, fitri. (2014). Korelasi Nilai Ujian Akhir Sekolah Dengan Nilai Ujian Nasional Pada Mata Pelajaran Fisika Siswa Kelas Xii-Ia Sma Negeri 8 Banda Aceh. SkripsiFakultas.

- Yunita, F. (2014). Korelasi Nilai Ujian Akhir Sekolah Dengan Nilai Ujian Nasional Pada Mata Pelajaran Fisika Siswa Kelas XII-IA Sma Negeri 8 Banda Aceh. Skripsi Fakultas.
- Yusnandar, M. E. (2004). Aplikasi Analisis Regresi Non-Linear Model Kuadratik Terhadap Produksi Susu Kambing Peranakan Etawah (Pe) Selama 90 Hari Pertama Laktasi. Informatika Pertanian, 13(Desember 2004), 735–743.

