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The Influence of Motivation and an Accomplished Mastery of Math and Science Learning Physics Results

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Abstract:- This research aims to know the relationship between motivation and an accomplished mastery of Math and Science learning outcomes with Physics students at the Junior High School of the Catholic Santa Monika Paniki Manado. This research is descriptive research and korelasional. The population in this study are all students in junior high Catholic Santa Monika Paniki active attended the academic year 2013/2014. The sample in this study amounted to 38 students are taken randomly from six classes in junior high Catholic Santa Monika Paniki. Data collection is done using question form and documentation. The collected data were analyzed by using multiple regression and correlation analysis. The results of the analysis of the data shows that there are multiple relationships between a positive motivation of overachievers and mastery of Math and Science learning outcomes against Physics students in junior high Catholic Santa Monika Paniki modeled in $\hat{Y} = 34,83 + 0,13X_1 + 0,45X_2$ with a coefficient of correlation R = correlation coefficient determination and 0,672 double $R^2 = 0,451$. This shows there is the influence of motivation and an accomplished mastery of mathematics of 45.10% IPA learning outcomes against physics. Thus it can be said that these three variables have a positive relationship.

Keywords:- *Motivation, an accomplished mastery of Mathematics, Physical Science, Study Results.*

I. INTRODUCTION

Education is a conscious effort to prepare learners in order to play an active role and positive for the sake of developing the potential in her life now and in the future. In the era of globalization, the challenges for quality improvement in various aspects of life can not be bargained again because the rapid development of SCIENCE and TECHNOLOGY requires each nation to exert mind and all potential resources. Therefore, adult education should be directed at the improvement of the competitiveness of Nations in order to be able to compete in the global competition (Wayan, 2008).

Physics is a part of Natural Science that studies the physical symptoms, structure of matter, energy and material perubagan accompanying material changes are generally obtained through the natural symptoms. Teaching in General Physics aims to develop human resources who have intellectual and psychomotor skills in physics which is based by scientific attitude so that it is able to follow the development of science and Technology (SCIENCE And TECHNOLOGY).

Educate and assist students in improving learning outcomes is not easy because it influenced several factors. According to Sardiman (Sardiman, 2006), there are two factors that affect student learning outcomes i.e. internal factors and external factors. Internal factors include intelligence, motivation, anxiety, habits, interests, and so on. While external factors include family, school environment, the environmental community, the keadaanm social, economic, and so on.

Motivated achievers is one of the factors that have an important role in enhancing student learning outcomes. This is because the motivation is the catalyst and driving force of individuals who can rise and give direction for individuals to perform specific activities to achieve specific objectives (Sardiman, 2006). Effort increases student learning outcomes in the field of Physics, IPA study intimately connected with mastery of Matematikaa students. This is because Matematikaa is the Foundation of all sciences that require calculations, such as the SCIENCE of physics. Mastering Mathematics can assist students in increasing the power of reason, thinking logically, systematically and creatively. The important role of Mathematics can help students to more easily understand and apply the SCIENCE of physics area of study in kehiduan everyday so the ultimately can improve student learning outcomes.

Based on early observations conducted by researchers at Catholic JUNIOR HIGH Santa Monika Paniki, note that in the process of learning, there are a few things that cause low results learn IPA Physics students, among others, lack of motivation of achievers and the mastery of mathematics students in the learning process.

➢ *Formulation of the Problem*

- Whether there is a relationship between the motivation of overachievers and the Catholic JUNIOR HIGH SCHOOL student learning outcomes Santa Monika Paniki in IPA study physics?
- Whether there is a relationship between mastery of mathematics and Catholic JUNIOR HIGH SCHOOL

student learning outcomes Santa Monika Paniki in IPA study physics?

- Whether there is a connection between motivation and mastery of math students perform against a Catholic JUNIOR HIGH SCHOOL student learning outcomes Santa Monika Paniki in IPA study physics?

➢ *Research Objectives*

- To know the relationship between motivation of overachievers against the results of the study of JUNIOR HIGH SCHOOL students of Physics Catholic IPA Santa Monika Paniki.
- To know the relationship between mastery of mathematics and SCIENCE learning outcomes against Physics students of JUNIOR HIGH SCHOOL of the Catholic Santa Monika Paniki.
- To know the relationship between the motivsi and the control of achievers math and SCIENCE learning outcomes against Physics student Catholic JUNIOR HIGH Santa Monika Paniki. Sardiman (2006) reveals the motivation as a driving power that has become active. Motives become active at a particular moment, especially when the need to achieve a goal considered very urgent. According to Mc Donald (Sardiman, 2006), motivation is the change in energy in a person characterized by feeling and was preceded by the response to the existence of a purpose. So the motivation is the response of an action i.e. objectives, where these goals are concerned with their needs. Motivation can also be defined as a series of businesses providing certain conditions, so someone that wants to do something, and if he doesn't like it then he will attempt to negate or avoid feelings of dislike it (Sardiman, 2006). So the motivation it can be stimulated by factors from outside but the motivation that is growing inside of a person.

Based on the cause of the onset of a motivation (Hamzah, 2006), then motivation is divided into two kinds, namely (1) extrinsic motivation, namely motifs that function due to the stimulus from the outside, for example because of the exam will be held; the requirement for admission to College and so on so that someone trying to actively do something with and (2) intrinsic motivation, namely motifs which works without being stimulated from the outside. In other words, the impetus already existing in the individual, for example, and the nature of self indulgence will affect what he was doing. Sardiman (2006) stated in the teaching and learning activities, motivation is very important because it serves as (1) energizer, namely its driving force that encourages students to mberbuat something for example work, (2) directedness, i.e., determine the direction deeds towards the goal to be achieved and (3) patterning, i.e. complete works what needs to be done to achieve the goal of matching. Motivation is for achievers achieve success. Success with regards to the behavior of the productive and always pay attention to the quality of its products, motivation is a personal concept of achievers is driving factor to achieve or accomplish something it wants in order to achieve success. To achieve the success that everyone has different obstacles, and by having the motivation high achievers, it is expected that barriers will be overcome and the desired success can be achieved (Siregar, 2006). According to Hamzah (2006), there are factors that affect the motivation of overachievers, including: (1) the individual factors of intelligence factor and a factor of individual judgment about him; (2) environmental factors of family environment, social environment, and academic environment. Pajow (2010), the characteristics of individuals who have the motivation high achievers include (1) having a personal responsibility against the activities conducted; (2) the need to get feedback on the work which he had done; so that it can be known quickly that results obtained deri activities better or worse; (3) innovation in doing a job is done differently, efficient, and better than before; (4) don't like the success of which is accidental or due to the actions of other people, and want to experience success or failure caused by acts of the individual itself. Based on the above description it can be concluded that there are a lot of factors supporting or indicators that motivates a person to Excel. These indicators include (1) persistence in learning, (2) discipline in learning, (3) the desire for success, (4) perform in learning and (5) independence in learning.

Winkel revealed in the Tri Wardanik (2009) that "the results of the study was a series that became the Foundation for learning other (hierarchical order) or an ability that must-have students to finally arrive at results/ the final ability ". Linkages between mathematics and physics as expressed by Herbert Druxes (Tri Wardanik, 2009) "mathematics actually placed as a language for physics. Physics Science thus became a count.

"Mathematics is a means of deductive thinking is very useful for establishing scientific theory and is a prediction-prediks thereof, and to communicate the results of the activities of the kelimuan properly and meticulously" (Order of higher education in Wanhar, 2008) . Wanhar also reveals that mathematics are associated with the settlement of problems of physics, such as: the concept of the concept of variables, exponents, trigonometry, and the concept of equations. According to Mattes and Pilot (in Wanhar, 2008), to solve problems using math to calculate then there are two stages to be made (1) the workmanship and the results are written clearly. A lot of error in this stage because it used chevrons, dimensions, and the unit is wrong; (2) the new calculation is done at the end of the settlement. The settlement left in the form of new formulas and the end charged and calculated. Physics is one of science, can not stand on its own without any other knowledge. To understand and develop the concepts of Physics urgently needs mathematical knowledge.

Study according to the James o. Whittaker (Syarif Hidayatullah, 2009) learning is the process by which behavior posed or altered through training or experience. Geoch (Sunartombs, 2009): "Learning is a change in the U.S. result of performance practice ". This means that learning is a change in the skills as a result of the appearance. Fontana (Sunartombs, 2009), "learning is the process of changing the behaviour of individuals who are relatively fixed as a result of experience ". Learning would be better in the subjects studied were experiencing or doing it, so there are teoristik only. Gagne and Berliner (Anni, 2004) argues that, learning is the process by which an organism alters its behaviour because of the result of the experience. Understanding the concept of learning appears that contains three major elements, namely (1) learning related to behavior change; (2) change in behavior that occurs because the process is preceded by the experience; (3) change in behavior due to learning are relatively permanent.

The results of the study according to Oemar Hamalik (2006) is when someone has learned a behavior change will occur on that person for example of don't know be know, and from don't understand be understood. According to Sudjana (2005) results of study skills is owned by students after receiving a learning experience. So it can be concluded that the results of learning is a change in the behaviour of a person after making the learning process. The changes that occur as the knowledge, understanding, attitudes, skills, and others.

Research conducted by Chlaudia Bud (2013), entitled: the influence of Learning Interest of students and mathematical knowledge Against the results studied physics HIGH SCHOOL N 1 Langowan. In this study we use multiple correlation analysis which has three research hypothesis, namely: 1) there are positive influences among students learning interest against the results of the study of physics, on the grade XI IPA Program SMA N 1 Langowan; 2) there is a positive influence between mathematical knowledge students toward outcome studied physics at grade XI IPA Program SMA N 1 Langowan; 3) there is a positive influence on student learning and interest between mathematical knowledge against the results studied physics at grade XI IPA Program SMA N 1 Langowan. From this research indicates that using multiple correlation analysis researchers can figure out how big the influence of interest in learning and mathematical knowledge students toward outcome studied physics students.

Research conducted by Angriani Bud (2013), entitled: the relationship between motivation of achieving good results with the results of learning math Grade XI IPA SMA Negeri 1 Langowan. In this study we use the analysis of correlation sederhanadengan one hypothesis of research i.e. There is a significant relationship between the motivation of achieving good results with the results of learning math grade XI IPA SMA Negeri 1 Langowan. From this research indicates that using a simple correlation analysis researchers can figure out how big the relationship between motivation of achieving good results with the results of learning math students.

➢ *Research Hypotheses*

- There is a relationship between the motivation of overachievers with Catholic JUNIOR HIGH SCHOOL student learning outcomes Santa Monika Paniki in Physics majors IPA
- There is a relationship between mastery of Mathematics with the Catholic JUNIOR HIGH SCHOOL student learning outcomes Santa Monika Paniki in Physics majors IPA
- There is a relationship between the motivation of overachievers and mastery of mathematics learning result of students against the Catholic class of Santa Monika Paniki in Physics majors IPA

II. RESEARCH METHODS

This research is a survey research by using descriptive method and korelasional to get how big the relationship between motivation and an accomplished mastery of Math and SCIENCE learning outcomes towards the physics of JUNIOR HIGH SCHOOL students of the Catholic Santa Monika Paniki 2013/2014 school year.

The Catholic JUNIOR HIGH Santa Monika Paniki which has ancillary infrastructure such as sports fields, laboratories, and a library. The number of teachers in the Catholic JUNIOR HIGH Santa Monika Paniki was 13 people, the number of teachers IPA 2 people. This research was conducted in December 2013 until January 2014.

On the study population were taken throughout the Catholic JUNIOR HIGH SCHOOL students of Santa Monika Paniki 2013/2014 school year. The sample is part of the number and characteristics of which are owned by the population (Sugiyono, 2012). Because it populations in the study had levels or berstrata i.e., Class VII, class VIII, class IX, and then sampled in the study were taken at random using proportionate stratified sampling. According to Suharsimi Arikunto (1998), if the subject is the size of a population of over 100 people, then the sample is to be taken as much as 20%. This study, a population numbering 190 people and samples taken for as much as 20% or 38 people.

	VII A	VII B	VIII A	VIII B	IX A	IX B	Total
Population	27	29	29	30	38	37	190
Sample 20%	5,4	5,8	5,8	6	7,6	7,4	38
	5	6	6	6	8	7	38

Table 1:- Studies Sampling

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Based on table 1 sampling above, obtained the number of samples was entirely 38 people. This research consists of variables, namely:

- Free variable 1: the motivation of the student Achievers (X_1),
- variable-free 2: mastery of Mathematics students (X_2), variable bound to: results learn IPA Physics Students (Y)

Conceptual definition: an accomplished Student Motivation is defined as a boost or strength in students which caused activities as well as the direction of learning to achieve the desired goals. Mastery of math students is defined as the capability of students in solving using math settlement.

Student learning outcomes are defined as the behaviour of sebagaiperubahan after making the learning process. The changes that occur as the knowledge, understanding, attitudes, skills, and others.

Operational definition: a Variable is examined, namely two free variables and bound variables one, namely:

- student achievers Motivation as free variables (X_1), defined as a boost or strength in students which caused activities as well as the direction of learning to achieve the desired goals.
- Mastery of math students as free variables (X_2), defined as the ability of the student in resolving problems using mathematical resolution.
- Student Learning achievement as a variable (Y), i.e. student learning is the result of the test results late lesson IPA physics.

In this study, data gathering instruments as follows:

Method documentation is the technique of data collection by researching written sources that already exist, namely by way of retrieving the data the results of learning math and SCIENCE of physics students. Now that is a list of statements given to the respondent in this case regarding issues that are examined. With this technique, the authors prepared a number of statements and distributed to respondents to answer directly. Question form is used to obtain about the motivation of an accomplished student.

This research use research instrument in the form of the now. For an accomplished motivational students use instruments now consisting of 5 item 28 item indicators and statements developed from the indicators. An accomplished student motivation instruments arranged are structured using Likert scale model. Now an accomplished student motivation in the learning activities provided a score in accordance with his statement. Instrument test done to test validity and reliability. Test validity refers to the validity of invalid constructs. An instrument is said to be valid if the coefficients of correlation of product momentatau rhitung > rtabel ¬ (Siregar, 2013).

After testing the validity, then continued with the reliability test. Data analysis techniques using multiple correlation analysis techniques.

The steps of data analysis in this research are:

a. Test the validity of the data that refers to test the validity of invalid constructs with engineering product moment correlation, i.e.:

b. Uji reliabilitas dengan menggunakan rumus alpha :

$$r_{11} = \left(\frac{k}{k-1}\right)\left(1 - \frac{\Sigma S_t}{S_t}\right)$$

c. Normality test data using the Liliefors Test.

Calculates the linear regression equation between the variables X_1 simple with Y and Y with X_2 variables using the equation:

$$\hat{Y} = a + bX \qquad \text{(Supardi, 2013)}$$

d. For the first and second hypothesis test used the formula correlation Pearson Product Moment, namely:

$R_{xy} = \frac{n\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{\{n\Sigma x^2 - (\Sigma x)^2\}\{n\Sigma y^2 - (\Sigma y)^2\}}}$ (Sugiyono, 2012) With:

Rxy = coefficient of correlation between variables x and y and two variables be correlated

n = the number of test participants

X = number of score items; Y = total score total

$Ryx_1x_2 = \sqrt{\frac{r^2_{yx_1} + r^2_{yx_2} - 2r_{yx_1}r_{yx_2}r_{x_1x_2}}{1 - r^2_{x_1x_2}}}$ (Sugiyono, 2012)

e. Where:

Ryx1x2 = correlation between variables X 1 with X 2 together with the variable Y

ryx_1 = correlation Product Moment between X_1 with Y

ryx_2 = correlation Product Moment between the X_2 with Y

rx_1x_2 = correlation Product Moment between X_1 with X_2

Calculate the regression equation of double

The$\hat{Y} = b_0 + b_1X_1 + b_2X_2$ formula of the double linear equations for two free variables are: (Supardi, 2013)

Determine the significance of the correlation coefficient test with formula double-F

$$F_h = \frac{R^2/k}{(1-R^2)/(n-k-1)} \qquad \text{(Sugiyono, 2012)}$$

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III. RESEARCH RESULTS AND DISCUSSION

➢ *Description of Data*

From the results of research on 38 grade IX JUNIOR Catholic Santa Monika Paniki 2013/2014 academic year, has obtained research data for student achievers motivation variables (X1), mastery of Mathematics (X2), and learn IPA Physics students (Y). The following data are presented on the description of information data include mean, median, mode, and standard deviation of each variable research. Description of the data also serves a frequency distribution of each variable. A description of each data variable in detail can be seen in the following descriptions:

	X_1	X_2	Y
N	38	38	38
Scor Min	82	80	80
Scor Max	128	98	97
average	108	89	89
Standard Deviation	11,48	4,35	4,27
Mean	107,71	89,37	88,87
Median	105	89	89
Modus	104	87	87
Range	46	18	17
clas Interval	6	6	6
leght clas	8	3	3

Table 2:- Statistical data for the variables x 1, x 2, and Y

➢ *The Motivation of the Student Achievers*

Based on the research data using the excel program on computer assistance for variable data such as his statistics achievers motivation on table 2. To determine the number of class intervals used the formula 1 + 3.3 Log n, where n is the number of the subject of the research. After it becomes aware of the range of the data will be retrieved long each interval class groups, long range/class. List of variable frequency distribution interest student learning can be seen in table 3 below:

No.	Class Interval	Middle Grades	Frequency	Cumulative Frequency	Relative Frequencies (%)
1	82-89	85,5	1	1	2,63
2	90-97	93,5	6	7	15,79
3	98-105	101,5	12	19	31,58
4	106-113	109,5	7	26	18,42
5	114-121	117,5	7	33	18,42
6	122-129	125,5	5	38	13,16
	Σ		38		100,00

Table 3:- Frequency Distribution Data An Accomplished Student Motivation

The distribution of scores on student motivation achieving good results table 2 gives an overview that there were 31.58% of students gained an average rating, 18.42% of students scored below average, and 50% of students who scored above average.

➢ *Math Mastery*

Based on the research data using the excel program on your computer help for Maths mastery of his statistics data variables as shown in table 1. To determine the number of class intervals used the formula 1 + 3.3 Log n, where n is the number of the subject of the research. After it becomes aware of the range of the data will be retrieved long each interval class groups, long range/class. List of variable frequency distribution mastery Math students can be seen in table 3 below: Table 3

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No.	Class Interval	Middle Grades	Frequency	Cumulative Frequency	Relative Frequencies (%)
	80-82	81	2	2	5,26
2	83-85	84	4	6	10,53
3	86-88	87	13	19	34,21
4	89-91	90	5	24	13,16
5	92-94	93	8	32	21,05
6	95-97	96	5	37	13,16
7	98-100	99	1	38	2,63
	Σ		38		100,00

Table 4:- Frequency distribution Data of mathematical knowledge Students

Math Mastery score distribution in table 4 above give an idea that there were 13.16% of students scored, on average, 50% of students scored below average, 38.84% of students and scored above average.

➢ *IPA Learning Physics Results*

Based on the research data using the excel program help on the computer to the variable results learn IPA Physics students his statistics data as in table 1. To determine the number of class intervals used the formula 1 + 3.3 Log n, where n is the number of the subject of the research. After it becomes aware of the range of the data will be retrieved long class intervals of each group i.e. the span class/panjang. List of IPA learning results frequency distribution of physics students can be seen in table 5 below:

No.	Class Interval	Middle Grades	Frequency	Cumulative Frequency	Relative Frequencies (%)
1	80-82	81	2	2	5,26
2	83-85	84	8	10	21,05
3	86-88	87	9	19	23,68
4	89-91	90	10	29	26,32
5	92-94	93	3	32	7,89
6	95-97	96	6	38	15,79
	Σ		38		100,00

Table 5:- Frequency distribution Data Results Learn IPA Physics Students

The distribution of the score results learn IPA physics in Table 5 above give an idea that there were 26.32% of students scored, on average, 50% of students scored below the average of 23.68% students, and scored above average.

➢ *Research Results*

Processing of data in this study uses the Microsoft Excel Program that has been tailored to the needs of statistics ujinya. Before the score now which is the data processed by the research results, first tested the validity and reliability of the score now. Test validity refers to the validity of invalid constructs using the correlation formula product moment after going through the test validity, then continued with test reliability.

Before the data in the study prepared by using simple linear regression analysis, correlation and linear regression, then double the data for each variable tested deployment data normality Test by using Liliefors. Testing normality distribution data show that each data variable is Gaussian.

Simple linear regression equation formula is:

$\hat{Y} = a + bX$ (Supardi, 2013)

Have acquired a = 67.9 and b = 0.19

Then the equation is Y =ˆ regresi 67,9 + X_1 achievement motivations for 0,19 with IPA learning Physics results.

Testing Linear Regression Equation Of Simple Linieritas

The process of testing a simple linear regression equation linieritas price used:

n = 38; k = 2; α=0,05; $dk_{numerator}$ = 1; $dk_{denominator}$ = 36; 67,9; a = b = 0.19; JKreg (a) = 300108.6579; JKreg (ba) = 184,6093767; JKres = 489.7327286; RJKreg (a) = 300108,6579; RJKreg (ba) = 184,6093767; RJKres = 13.60368691; Ftable = F (1) = 4,11 (36).

Furthermore the price substitution into the equation below obtained price $F_{account}$

$$F_h = \frac{RJK_{reg\ (b\backslash a)}}{RJK_{res}}$$

Then retrieved $F_{account} = F_{table} > 13,57 = 4.11$, so it can be concluded that there is a significant influence on the motivation of overachievers (X_1) against the results of learning Physics IPA (Y).
Calculates the Linear Regression Equation is simple for the second Hypothesis (Y against X_2)
Simple linear regression equation formula is:
$\hat{Y} = a + bX$ (Supardi, 2013)
Have acquired a = 37.09 and b = 0.579

Then the regresinya equation is $\hat{Y}$ = 0,579 + X_2 37,09 for mastery of math and SCIENCE learning Physics results
Testing Linear Regression Equation of Simple Linieritas
The test results of simple linear regression equation of linieritas (see Appendix 10) price-price used:
n = 38; k = 2; □=0,05; $dk_{numerator} = 1$; $dk = _{denominator}$ 36; a = 37.09 and b = 0.579; JKreg (a) = 300108.6579; JKreg (ba) = 234,5266963; JKres = 439.8154089; RJKreg (a) = 300108,6579; RJKreg (ba) = 234,5266963; RJKres = 12.21709469; F_{table} = F (1) = 4,11 (36).

Furthermore the price substitution into the equation below obtained price $F_{account}$

$$F_h = \frac{RJK_{reg\ (b\backslash a)}}{RJK_{res}}$$

Then retrieved $F_{account} = F_{table} > 12,217 = 4.11$, so there is a significant influence inferred mastery mathematics (X_2) against the results of learning Physics IPA (Y).
Test Hypotheses Using The Correlation Coefficient Calculation

Symbol Statistic	Value Statistics
r_{X1Y}	0,523
r_{X2Y}	0,589
r_{X1X2}	0,382
R_{X1X2Y}	0,671

Table 6:- Summary of the results of the correlation Between Variables

Testing the Correlation Coefficient Doubles

➢ *Hypothesis*

There is a positive linear relationship between motivation and mastery of Math students achieving good results against the results of the study of JUNIOR HIGH SCHOOL students Physics IPA Santa Monika Paniki

The hypothesis was tested:
H_O: ρ = 0 (coefficient of correlation does not mean)
H_A: ρ ≠ 0 (correlation Coefficient means)
Statistical tests used are F-test with the formula:
$F = (R/k^2)/((1-R^2)/(n-k-1))$

Criteria: Reject Ho (ρ = 0) if $F_{account}$ is greater than F_{table} to dk $_{numerator}$ = k, dk $_{denominator}$ = (n-k-1) and the real extent of α.

The calculation result: n = 38; k = 2; $dk_{numerator}$ = 2; dk $_{denominator}$ = 35; α = 0,05; R = 0,672; R2 = 0.451 or (1-R2) = 0,549; F_{table} = F (2) = 3.28 (35)
F = (0,451/2)/((1-0,451)/(38-2-1)) = 14,407

The results obtained $F_{account} > F_{table} > 14.407$ 3.28 or then reject Ho and receive a positive correlation exists means Ha real between variables X_1 and X_2 with variable Y with keeratan R = 0.672 or 67%.

The hypothesis that there is a positive linear relationship between Motivation and mastery of Math students achieving good results against the results of the study of JUNIOR HIGH SCHOOL students Physics IPA Santa Monika Paniki accepted.

The Calculation of Binary Regression Equation

A linear regression equation formula for two free variables are:
$\hat{Y} = a + b_1X_1 + b_2X_2$ (Supardi, 2013)
where b_1 and b2 each of the regression coefficients is of X_1 and X_2.

Have been obtained: a = 34.83; b_1 = 0.13; b_2 = 0.45

The regression equation is then double is:
$\hat{Y}$ = 34,83 + 0, 13X_1 + 0, 45X_2 to the motivation of top achievers, mastery of mathematics and SCIENCE learning outcomes against physics.

Testing The Regression Equation Of Double Linieritas

The test results double regression equation linieritas price used:
n = 38; k = 2; α=0,05; $dk_{numerator}$ = 2; dk $_{denominator}$ = 35; a = 34.83; B1 = 0.13; B2 = 0.45; JKreg = 304.49; JKres = 369.85; F_{table} = F (2) = 3.28 (35).

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Furthermore the price substitution into the equation below obtained price $F_{account}$

$$F = \frac{JK_{reg}/k}{(JK_{res})/(n-k-1)}$$

Then retrieved $F_{account}$ = 14,407 greater than F_{table} = 3.28.

Conclusion: since $F_{account} > F_{table}$ Binary Linear Regression then Y upon X_1 and X_2 are the real ¬. The regression equation Y =ˆ double 34,83 + 0, $13X_1$ + 0, $45X_2$ is very meaningful.

IV. DISCUSSION OF THE RESULTS OF RESEARCH

From the results of the analysis of research data, an accomplished motivational variables relationship keeratan (X_1) and the results of learning outcomes learning SCIENCE physics, expressed with a coefficient of correlation of rx1y. From the results of the calculation obtained r_{x1y} = 0,532. From the results of testing the properties of simple linear regression obtained $F_{account}$ = 13,57 greater than F_{table} = 4.11. The conclusion is that a simple linear regression of Y over X_1 are real. A linear regression equation is thus sederhana $\hat{Y}$ = 67,9 + 0,19 X_1 is meaningless.

Keeratan variable relationship mastery mathematics (X_2) and the results of the study of the correlation coefficients revealed with rx2y. The calculation of earned rx2y = 0,589. From the results of testing the properties of simple linear regression retrieved 19,19 $F_{account}$ = greater than F_{table} = 4.11. The conclusion is that a simple linear regression of Y over X_2 are real. A linear regression equation is thus simple $\hat{Y}$ = 37,09 + 0, $57X_2$ is meaningless.

The value of the correlation coefficient (R) double that acquired for 0.672. From this correlation coefficient can be calculated coefficients of determination (R^2) = (0,6722) = 0,451. By looking at this it is clear that the determination of the coefficient of power is an accomplished student motivation and determination of the mastery of Mathematics and SCIENCE learning outcomes towards the physics of JUNIOR HIGH SCHOOL students of the Catholic Santa Monika Paniki is 45%.

The results obtained coefficients of determination of 0.672, on α = 0.05, $dk_{numerator}$, = 2, $dk_{denominator}$ = 35 it appears that hypothesis: there are positive linear relationships between motivation and mastery of Math students achieving good results against the results of learning SCIENCE Physics JUNIOR HIGH SCHOOL students of Santa Monika Paniki, acceptable by looking at $F_{account}$ (14.407) greater than F_{table} (3.28).

This means that 45% of the variations that occur on the results of studying the Catholic JUNIOR HIGH SCHOOL student Physics IPA Santa Monika Paniki can be explained by motivation and an accomplished mastery of Math students, while 55% are determined by other factors.

From the results of testing properties of double linear regression obtained $F_{account}$ = 14,407 greater than F_{table} = 3.28. The conclusion is that a binary linear regression of Y over X_1 and X_2 are real. A linear regression equation was thus double-$\hat{Y}$ = 34,83 + 0, $13X_1$ + 0, $45X_2$ is meaningless.

There are influences from the atmosphere through academic achievers motivation towards results studied physics students of Class XI Programme IPA SMA Negeri 1 Tomohon amounted to 2.7%. There is the influence of the academic services through motivated achievers against the results of the study of physics students of Class XI Programme IPA SMA Negeri 1 Tomohon amounting to 4.5%. (Dungus Ferdy and Marsel Supit, 2018:9)

V. CONCLUSION

There is a simple linear relationship Motivated Achievers against the results of the Study of JUNIOR HIGH SCHOOL students of Physics Catholic IPA Santa Monika Paniki modeled

$\hat{Y}$ = 67,9 + 0, $19X_1$. This means the higher motivation of overachievers, the higher the results of learning SCIENCE Physics students.

There is a simple linear relationship mastery of Math and SCIENCE Learning Outcomes towards the physics of JUNIOR HIGH SCHOOL students of the Catholic Santa Monika Paniki modeled $\hat{Y}$ = 37,09 + 0, $57X_2$. This means that the higher the mastery of Mathematics, then the higher yield learning IPA Physics students.

There is a linear positive influences among high achieving Math Mastery and Motivation towards Learning Outcomes students Catholic JUNIOR HIGH SCHOOL Physics IPA Santa Monika Paniki, because with the correlation coefficient R = $F_{account} > F_{table}$ 0,672 obtained or 14.407 > 3.28, which means to reject Ho (the hypothesis there is no positive influence and motivation among the achievers Math Mastery students against the results of learning IPA Physics students)

There are multiple relationships between Motivation and an accomplished mastery of Math and SCIENCE Learning Outcomes towards the physics of JUNIOR HIGH SCHOOL students of the Catholic Santa Monika Paniki modeled $\hat{Y}$ = 34,83 + 0, $13X_1$ + 0, $45X_2$. This means the higher achievers and Math Mastery motivation, then the higher yield learning IPA Physics students.

The results of the determination of the coefficient of R^2 = 0,451 doubles, 45% of the variations that occur on the results of studying the Catholic JUNIOR HIGH SCHOOL student Physics IPA Santa Monika Paniki can be explained by motivation and an accomplished mastery of Math students, while 55% are determined by other factors that can be researched further.

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