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THE RELATIONSHIP OF TEACHER PROFESSIONAL COMPETENCE AND MOTIVATION TO STUDENT SCIENCE LEARNING ACHIEVEMENT IN GRADE IV SD NEGERI 1 AIRMADIDI

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Abstract:

This research aims to determine the relationship between teacher professional competence and learning motivation on learning achievement. This research was conducted at SDNegeri 1 Airmadidi with 33 students as the sample in this research. The sampling technique uses a probability sampling technique using the Slovin formula. Test descriptive analysis using the SPSS 22 program. This research hypothesis was tested using multiple linear regression analysis techniques. Testing of analysis requirements is carried out by normality tests and linearity tests. Based on the research results, it was found that: 1) there is a positive and significant relationship between teacher professional competence and student learning achievement at SD Negeri 1 Airmadidiof 21.5%, while high and low learning achievement can be predicted using the regression equation $Y=19.085+0.806\ X_1$; 2) there is a relationship The positive and significant relationship between learning motivation and student learning achievement at SD Negeri 1 Airmadidiis 14.3%, while high and low learning achievement can be predicted using the regression equation $Y=83.131+0.186X_2$; 3) there is a positive and significant relationship between teacher professional competence and learning motivation. on student learning achievement at SD Negeri 1 Airmadidiis 62.7%, while high and low learning achievement can be predicted using the regression equation $Y=9.266+0.755X_1+0.461X_2$. Based on the research results, it can be concluded that to improve student learning achievement at SD Negeri 1 Airmadidi, it is necessary to increase teacher professional competence and learning motivation.

Keywords **—Learning Achievement, Teacher Professional Competence, Learning Motivation.**

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I. INTRODUCTION

Learning achievement is one indicator that can be used to see the quality of a person in understanding science. Learning achievement can also be a characteristic of the seriousness shown by students and as an assessment criterion for educational institutions. [1]said that learning achievement is the maximum result achieved by a person after carrying out learning efforts. In addition,learning achievement is evidence of learning success or the ability of a student to carry out learning activities in accordance with the weight he achieved. This is reinforced by [2]who said that learning

achievement is the result achieved by a person in learning efforts as stated in the report card.

Success in a person's learning achievement can not only be seen from the results of his report card, but also seen from various aspects that become a benchmark for learning achievement. According to [1]said that learning achievement in education is the result of measurements of students which include cognitive, affective and psychomotor factors after following the learning process measured using test instruments or relevant instruments. Reinforced by [3] said that in the context of learning there are several benchmarks that can be used to determine student achievement.One of the benchmarks used is learning achievement which refers to the achievement of educational taxonomy which includes cognitive, affective, and psychomotor aspects.

The teacher holds the key to the success of a learning process. This is supported by the statement [4]The role of teachers is very influential on increasing student achievement. Learning achievement is the disclosure of ideal learning outcomes that include all psychological domains that change as a result of student experience and learning process.The reality is that there is still a gap between hope and reality. There are several problems that arise, in fact, the achievement of learning science class IV has not all students who have achieved achievements, almost all of them already hold professional teachers but in their implementation they are less professional and their responsibilities as professional teachers are not carried out as they should. One of the influencing factors is the external factor, namely the more professional the teacher teaches, the more learning presration increases.Teachers who are qualified and able to teach well can help students to understand the subject matter more easily and quickly. And it can be concluded that the quality of professional teachers in teaching has a significant relationship with student learning achievement.

Education and teaching is a purpose-conscious process. Objectives can be understood as an effort to formulate the results expected by students after completing the learning experience [5]. One of the achievements of teaching goals is seen from the learning achievements achieved by students. With high achievement, students have a good indication of knowledge. Factors related to student achievement are teacher professionalism and motivation. With motivation, students will learn harder, tenacious, diligent and have and have full concentration in the learning process.Teacher professional competence and motivation in learning are one of the things that need to be raised in learning efforts at school, thus increasing learning achievement can be more optimal because these students feel that the teacher is professional and provides motivation to improve learning achievement that has been achieved previously.

Professional educators are educators who are qualified, competent, and educators who are desired to bring learning achievement and are able to influence the teaching and learning process of students which will later produce good student learning achievement [6]. Law No. 14 of 2005 concerning Teachers and Lecturers in article 1 paragraph 1 also explains the definition of teacher is "Professional educators with the main task of educating, teaching, guiding, directing, training, assessing and assessing students from an early age through formal education, primary education and secondary education.

Government Regulation Number 19 of 2005 concerning National Standards states that professional competence is the ability to master learning material broadly and thoroughly, which includes: (a) concepts, structures and scientific/technological/artistic methods which are comprehensive/coherent learning materials; b) school curriculum study materials; c) conceptual connections between related topics; (d) application of scientific concepts in everyday life and (e) professional competence in a global context while preserving the values and culture of the nation. This means that mastery of professional competencies for teachers will provide progress in learning to students.The teacher is more familiar with the theoretical concepts of the material presented. In accordance with professional competence in the 21st century, teachers are required to be able to design learning media as an innovation by utilizing online media or technology[7].Innovative learning models are also used in the delivery of material. The context of education in Indonesia in which the issue of the quality of education has long been a concern for all parties. One of the most fundamental

concerns related to the low quality of education in Indonesia is teacher competence. Competency is the embodiment or actualization of potential that educators must develop.

Professional competence is the ability of a teacher to master a subject broadly and deeply. The learning process and student achievement are not only determined by the school, model, structure and content of the curriculum, but are largely determined by the teacher and the teacher's qualifications. The measure of teacher professionalism is (1) mastery of the material, structure, concepts, and scientific ways of thinking that support the subjects taught. (2) Management of competency standards and core competencies of the subjects taught. (3) Develop teaching materials that are taught creatively. (4) Develop professional skills through continuous reflective activities.(5) Utilization of ICT (information and communication technology) for self-development. We must take into account the fact that the development of education with its innovative concepts requires high competence of managers and implementers.

Learning motivation is a very important element in the learning process, [5] learning motivation is the overall driving force within students that causes learning activities because without realizing it that learning can be influenced by active or passive participation of students in the learning process in class. This condition can affect the results that students will achieve." Learning motivation is the internal and external drive of students to learn in order to change general behavior with some indicator or supporting factor.

The success of learning can be seen from the extent of teacher readiness in preparing students through learning activities. Motivation will also contribute to the achievement of learning achievement. According to [8], "achievement is the result achieved (performed and expected). According to the definition, Learning Achievement is the mastery of knowledge and skills developed by a subject, usually expressed by grades or numbers assigned by the state. Teachers with poor readiness cannot provide optimal performance and tend to be less good so that it will have an impact on student perceptions that look negatively at teachers. Therefore, teacher professional competence and learning motivation are considered to be related and related to achieving optimal student learning achievement.

Based on the initial observations the researchers made on grade IV students at SD Negeri 1 Airmadidi it was known that students' science learning achievement decreased, researchers found problems related to teacher professional competence that was less than optimal, and had not fully met the criteria requirements possessed by professional teachers. Educators are still very very limited in material development and mastering information and communication technology. Professional educators should meet the professional competence of teachers.Some students don't seem to really understand and don't want to ask the teacher, because some teachers in delivering the material are very firm so that students dare not express opinions or questions that students think they don't know at all.

So it can be said that the lack of maximum student learning achievement achieved is related to teacher professional competence due to lack of development of teaching materials and monotonous and unvaried learning methods and lack of teachers providing learning motivation to students to raise student enthusiasm in the teaching and learning process has an impact on children's unsatisfactory learning achievement.

II. RESEARCH METHODS

This research is a research with a quantitative approach Research methods are scientific ways to obtain data with specific purposes and uses. According to [9], this quantitative research process is linear where the steps are clear and carried out regularly starting from problem formulation, hypothesis theory, data collection, data analysis to making conclusions and suggestions. This study uses statistical descriptive analysis to describe data and samples, this opinion is in line with [10] that descriptive statistics help to simplify large amounts of data logically. This study used validity and reliability tests, prerequisite tests, namely normality and linearity tests, and hypothesis tests, namely simple regression and multiple regression.

This study aims to test the hypothesis by describing and analyzing the relationship of existing variables, namely the Relationship between Teacher Competence and Learning Motivation to

Science Learning Achievement of Grade IV Students at SD Negeri 1 Airmadidi. To test hypotheses 1 and 2 using a simple regression test, namely about the relationship between the teacher's Professional Competence variable (X1) to the Learning Achievement variable (Y) and the Learning Motivation variable (X2) to Learning Achievement (y). According to Hidayat (2018), multiple regression is a test used in forecasting dependent variables based on independent variables. Multipleregression in this study was used in hypothesis 3, which is about the relationship between teacher professional competence (X1) and learning motivation (X2) to learning achievement (Y).

TABLE IPOPULATION DATA

No.	Population	Number
1	Class IV A	25
2	Class IV B	25
Total		50

TABLE IIIRESEARCH SAMPLE DATA

No.	Class	Number of Students	Sample
1	IV A	25	$\frac{25}{50} \times 33$ 17
2	IV B	25	$\frac{25}{50} \times 33$ 16
Total		50	33

Research hypotheses can be notated in the form of statistical hypotheses, as follows:

1. Ho :p x_1= 0 There is no relationship between professional competence and learning achievement.
   H1 : p x_1> 0 There is a relationship between professional competence and learning achievement.
2. Ho : p x_2 = 0 There is no relationship between Learning Motivation and Learning Achievement
   H1 :p x $_2$> 0 There is a relationship between Student Learning Motivation and Learning Achievement
3. Ho : p $x_{1.2}$ = 0 There is no relationship between professional competence and Learning Motivation Together with Learning Achievement.
   H1 : p $x_{1.2}$> 0 There is a relationship between professional competence and Learning Motivation Together with Learning Achievement.

III. RESULTS OF RESEARCH AND DISCUSSION

A. Descriptive Analysis

a. Distribution of Teacher Professional Competency Scores

The variable instrument of teacher professional competence consists of 30 items. The lowest possible score was 30 and the highest score was 120. From the data obtained for the minimum score achieved is 73 and the maximum score achieved is 120

from the calculation results obtained the Mean (M) price of 99.21, Median (Me) of 102.00, and Mode (Mo) of 107.

TABLE IIIIISTATISTIC ON PROFESIONAL COMPETENCE OF TEACHERS

Statistics		
Kompetensi Profesional Guru		
N	Valid	33
	Missing	0
Mean		99.21
Std. Error of Mean		1.972
Median		102.00
Mode		107
Std. Deviation		11.327
Variance		128.297

b. Distribution of Learning Motivation Scores

The learning motivation variable instrument consists of 30 items. The lowest possible score was 30 and the highest score was 120. From the data obtained for the minimum score achieved is 78 and the maximum score achieved is 120 from the calculation results obtained the Mean (M) price of 99.48, Median (Me) of 99.00, and Mode (Mo) of 120.

TABLE IVIILEARNING MOTIVATION STATISTICS TABLE

Statistics		
Learning Motivation		
N	Valid	33
	Missing	0
Mean		99.48
Std. Error of Mean		2.253
Median		99.00
Mode		120
Std. Deviation		12.940
Variance		167.445
Range		42
Minimum		78
Maximum		120
Sum		3283

c. Distribution of Learning Achievement Scores

The learning achievement variable instrument consists of 30 items. The lowest possible score was 30 and the highest score was 120. From the data

obtained for the minimum score achieved is 85 and the maximum score achieved is 110 from the calculation results obtained the Mean (M) price of 101.67, Median (Me) of 103.00, and Mode (Mo) of 96.

TABLE VV
LEARNING ACHIEVEMENT STATISTICS TABLE

Statistics		
Learning achhivement		
N	Valid	33
	Missing	0
Mean		101.67
Std. Error of Mean		1.109
Median		103.00
Mode		96
Std. Deviation		6.372
Variance		40.604
Range		25
Minimum		85
Maximum		110
Sum		3355

B. Test Hypothesis

a. Test Hypothesis I

Based on the formulation of the hypothesis I problem in this study is:

Ho : There is no significant relationship between teacher professional competence and learning achievement in public elementary schools 1 Airmadidi

Ha : There is a significant relationship between teacher professional competence and learning achievement in public elementary schools 1 Airmadidi

Testing hypothesis I used simple regression analysis to determine the relationship of the variable Teacher professional competence (X1) to learning achievement (Y). Data analysis using SPSS application version 22 as shown in the following table.

TABLE V
SIMPLE REGRESSION TEST OF TEACHER PROFESIONALCOMPETENCY (X1) AGAINST LEARNING ACHIEVEMENT (Y)

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	19.085	19.303		.989	.000
	Teacher professional competence	.806	.201	.539	4.000	.001

a. Dependent Variable: Learning Achievement

From the SPSS output above, it can be included in the regression equation as follows.

Y'= a + bX

Y'= 19.085 + 0.806

The results of the equation above can be translated into a constant of 19.085 which means that the consistency value of the teacher professional competence variable (X_1) is 19.085, the regression coefficient (X_1) is 0.806 which states that adding 1% of the teacher's professional competency value will increase learning achievement by 0.806. The regression coefficient is positive so that it can be said that the direction of the relationship between teacher professional competence (X_1) and learning achievement (Y) is positive.

Based on the results of a simple regression test in the table above, a calculated t value for the influence of the variable X1 on Y is 4,000 while the table t value can be seen in the statistical table at a significance of 0.05/2 = 0.025 (2-sided test) with degrees of freedom (df) n - k or 33 - 2 = 31, the results obtained for the table t are 2.040. When compared the value of t count 4.000 is greater than t table 2.040. Thus, it can be concluded that between teachers' professional competence there is a significant relationship with learning achievement.

Furthermore, to find out how much the relationship between the variable of teacher professional competence (X_1) and learning achievement (Y), the results of the coefficient of determination test are presented as follows.

TABLE VI
TEST COEFFICIENT OF DETERMINATION OF TEACHER PROFESIONAL COMPETENCE (X1) AGAINST LEARNING ACHIEVEMENT (Y)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.418[a]	**.215**	.186	6.459

a. Predictors: (Constant), Teacher Professional Competence

b. Dependent Variable: Learning Achievement

From this output, the R square value (coefficient of determination) is 0.215, if the percentage KD = R^2 x 100% or 0.215 x 100% = 21.5% means that the relationship between the independent variable of teacher professional competence (X_1) to the dependent variable of Learning achievement (Y) is 21.5%. This means that 21.5% of learning

achievement can be explained by teacher professional competence variables while the remaining 78.5% is explained by other factors not examined in this study.

Based on the results obtained, it can be concluded that H0 is rejected and Ha is accepted. Thus Hypothesis I is accepted and there is a positive and significant relationship between teachers' professional competence on learning achievement in public elementary schools 1 Airmadidi.

b. Test Hypothesis II

Based on the formulation of the hypothesis II problem in this study is:

H0: There is no significant relationship between learning motivation and learning achievement in public elementary school 1 Airmadididi.

Ha: There is a significant relationship between learning motivation and learning achievement in public elementary school 1 Airmadidi.

TABEL VII

SIMPLE REGRESSION TEST EFFECTS OF LEARNIG MOTIVATION (X2 AGAINST LEARNING ACHIEVEMENT (Y)

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.131	8.211		10.124	.000
	Learning motivation	.186	.082	.378	2.276	.030

a. Dependent Variable: Learning Achievement

From the SPSS output above, it can be included in the regression equation as follows.

$Y' = a + bX$

$Y' = 13.131 + 0.186\ X_2$

The results of the equation above can be translated into a constant of 13.131 which means that the consistency value of the learning motivation variable (X_2) is 13.131, the regression coefficient (X_2) is 0.186 which states that adding 1% of the value of learning motivation will increase learning achievement by 0.186. The regression coefficient is positive so that it can be said that the direction of the relationship between learning motivation (X_1) and learning achievement (Y) is positive.

Based on the results of a simple regression test in the table above, a calculated t value for the influence of the variable X_2 on Y is 2.276 while the table t value can be seen in the statistical table at a significance of 0.05/2 = 0.025 (2-sided test) with degrees of freedom (df) n - k or 33-2 = 31, the results obtained for the table t are 2.040. When compared the value of t count 2.276 is greater than t table 2.040. Thus, it can be concluded that between learning motivation there is a significant relationship with learning achievement.

Furthermore, to find out how much the relationship between the learning motivation variable (X_2) and learning achievement (Y), the results of the coefficient of determination test are presented as follows.

TABLE VIII

LEARNING MOTIVATION COEFFICIENT OF DETERMINATION TEST (X2) ANGAINST LEARNING ACHIEVEMENT (Y)

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.378[a]	**.143**	.116	5.993

a. Predictors: (Constant), Learning Motivation

b. Dependent Variable: learning achievement

From this output, the R square value (coefficient of determination) is 0.143, if the percentage KD = R^2 x 100% or 0.143 x 100% = 14.3% means that the relationship of the independent variable of work motivation (X_2) to the dependent variable of learning achievement (Y) is 14.3%. This means that 14.3% of learning achievement can be explained by learning motivation variables, while the remaining 85.7% is explained by other factors not studied in this study.

Based on the results obtained, it can be concluded that H_0 is rejected and Ha is accepted. Thus Hypothesis II is accepted and there is a positive and significant relationship of learning motivation to learning achievement in public elementary school 1 Airmadidi.

c. Test Hypothesis III

Based on the formulation of the hypothesis III problem in this study is:

H0 : There is no significant relationship between teacher professional competence and learning motivation together on learning outcomes in public elementary schools 1 Arimadidi

Ha: There is a significant relationship together between teacher professional competence and learning motivation on learning outcomes in public elementary school 1 Arimadidi.

Testing hypothesis III used multiple regression analysis to determine the relationship between variables of teacher professional competence and learning motivation simultaneously on learning achievement. Data analysis using SPSS application version 22 as shown in the following table.

TABLE IX
MULTIPLE REGRESSION TEST OF TEACHER PROFESSIONAL COMPETENCE (X_1), LEARNING MOTIVATION (X_2) AGAINST LEARNING ACHIEVEMENT (Y)

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	59.264	16.310		.568	.574
	Teacher professional competence	.765	.107	.785	7.041	.000
	Learning Motivation	.471	.158	.407	2.919	.006

a. Dependent Variable: Learning Achievement

From the SPSS output above, it is known that the significance value of 0.574 is greater than 0.05, so the regression model can be used to predict participation variables or in other words there is a relationship between teacher professional competence variables (X_1) and learning motivation (X_2) to learning achievement (Y). From the table of the results of the multiple regression analysis, the multiple regression equation is as follows.

$Y' = a+b1X_1+b2X_2$

$Y' = 59.264 + 0.765X_1 + 0.471X_2$

From the regression equation obtained, it can be explained as follows:

The constant value of 59.264, states that if the variable learning achievement (Y) is not influenced by both independent variables or teacher professional competence (X_1) and learning motivation (X_2) are zero, then the average magnitude of learning achievement will be 59.265

The regression coefficient for the independent variable X_1 teacher professional competence) is positive, indicating a unidirectional relationship between teacher professional competence (X_1) and learning achievement (Y). The regression coefficient of the variable X1 is 0.765 which shows that for every increase in the teacher's professional competency score (X_1) by one unit will lead to an increase in learning outcomes (Y) by 0.765.

The regression coefficient for the independent variable X_2 (learning motivation) is positive, indicating a unidirectional relationship between learning motivation (X_2) and learning achievement (Y). The regression coefficient of the variable X_2 is 0.471 which shows that for every increase in learning motivation score (X_2) by one unit will lead to an increase in learning achievement (Y) by 0.471.

TABLE X
UJI F (SIMULTANEOUSLY)

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2575.482	2	1287.741	25.249	.000[b]
	Residual	1530.033	30	51.001		
	Total	4105.515	32			

a. Dependent Variable: Learning Achievement

b. Predictors: (Constant), Teacher professional competence, Learning Motivation

From the ANOVA table above, an F value of 25.249 was obtained while the F value of the table can be seen in the statistical table with a significance value of 0.05, with a degree of freedom df 1 = (number of variables-1) or df 1 = 3-1 = 2 and df 2 = (n-k-1) or df 2 = 33-2-1 = 30, the result obtained F table of 3.32 . When compared the value of F calculate 25.249 greater than F table 3.32. Thus, it can be concluded that teacher professional competence and learning motivation are simultaneously related to learning achievement.

Selanjutnyauntukmengetahuiseberapabesarhubungan variabelkompetensiprofesional guru (X_1) dan motivasibelajar (X_2) terhadapprestasibelajar (Y) makadisajikanhasil uji koefisiendeterminasisebagaiberikut.

TABLE X
TEACHER PROFESSIONAL COMPETENCY COEFFICIENT OF DETERMINATION TEST (X_1) AND LEARNING MOTIVATION (X_2) AGAINST LEARNING ACHIEVEMENT (Y)

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.792[a]	**.627**	.602	7.142

a. Predictors: (Constant), Teacher professional competence, Learning Motivation

b. Dependent Variable: Learning Achievement

From this output, the R square value (coefficient of determination) is 0.627, if the percentage KD = R^2 x 100% or 0.627 x 100% = 62.7% means the influence of the independent variable (X) on the dependent variable (Y) is 62.7%. This means that 62.7% of learning achievement can be explained by variables of teacher professional competence and

learning motivation, while the remaining 37.3% is explained by other factors not examined in this study.

Based on the results obtained, it can be concluded that H0 is rejected and Ha is accepted. Thus Hypothesis III is accepted and there is a simultaneous positive and significant relationship between teacher professional competence and learning motivation on kalas IV learning achievement in public elementary school 1 Airmadidi.

C. Discussion

The results of hypothesis testing on the relationship between teacher professional competence and learning motivation on science learning achievement in grade IV students at SD Negeri 1 Aimadidi, then in the following discussion are the results of hypothesis testing that summarized.

1) The relationship of teacher professional competence to Learning Achievement

The relationship between teacher professional competence and learning achievement of grade IV students at SD Negeri 1 Aimadidi has a significant relationship based on the results of questionnaires that have been distributed by researchers to all grade IV students of SD Negeri 1 Airmadidi, it can be known that the value of teacher professional competence on student learning achievement at SD Negeri 1 Airmadidi, looking at the results of regression calculations using SPSS carried out, the values obtained on the calculation table can be seen that tcalculate (7.041) >ttable (2.040) and significance t (0.000) < 0.05, so that the null hypothesis is rejected and the alternative hypothesis is accepted thus there is a relationship between the variables of teacher professional competence on student learningachievement.

This study agrees with research from [11], partial relationship of pedagogic competence on learning outcomes, partial influence of professional competence on learning outcomes, simultaneous influence of pedagogic competence and professional competence on economic learning outcomes. The population in this study amounted to 77 students, data was collected by questionnaires and documentation. The results showed that pedagogic competence partially had a positive and significant effect on learning outcomes aimed at tcalculate value = 13.145 >ttable = 1.665.Professional competence partially has a positive and significant effect on learning outcomes shown by the value of tcalculate = 2.051 >ttable = 1.665. Soha is accepted and h0 is rejected.

Professional competence is mastery of learning material more broadly and deeply. Includes mastery of the subject curriculum material and the substance of science that overshadows the learning material and mastering the structure and methodology of science.

According to E. [12] competence is a combination of knowledge, skills, values and attitudes that are reflected in the habit of thinking and acting. In the teaching system, competence is used to describe professional ability, namely the ability to demonstrate knowledge and conceptualization at a higher level. This competency can be obtained through education, training and other experiences according to the level of competence.

According to [13], teachers are people who play an important role in designing learning strategies that will be carried out. The success of the learning process depends largely on the teacher's appearance in teaching and teaching activities can be carried out properly and correctly by someone who has passed certain education that is designed to prepare as a teacher. This statement leads to the understanding that teaching is a profession, and the teacher's job is a professional job.

The professional competence of a teacher is a set of abilities that a teacher must possess in order for him to carry out his teaching duties successfully. The competencies that must be possessed by a teacher consist of 3 (three), namely; personal competence, social competence, and teaching professional competence. The success of teachers in carrying out their profession is largely determined by these three with an emphasis on teaching ability. Thus, to become a professional teacher who has accountability in carrying out these three competencies, it takes determination and a strong desire in every teacher or prospective teacher to make it happen.

*2) **The Relationship of Learning Motivation to Learning Achievement:***

The relationship of learning motivation to learning achievement of grade IV students of SD Negeri 1 Aimadidi, work motivation to learning achievement of grade IV students at SD Negeri 1 Airmadidi there is a significant relationship based on the results of regression calculations using SPSS carried out on learning motivation variables to learning achievement obtained several values. In the calculation table, it can be known that the results of tcount (2.919) >ttable (1.674) and significance t (0.006) < 0.05, so that the null hypothesis is rejected and the alternative hypothesis is accepted thus there is a relationship between learning motivation variables and student learning outcomes.

This is in line with research from [14]The results showed that partially learning motivation was significantly related to the learning achievement of high school students in Tuban City. The implication of this study is that the higher the learning motivation, the higher the learning achievement will be able to increase student achievement. This finding is supported by respondents' data on the learning motivation of high school students in Tuban City, based on the tabulation of respondents' answers of 83.41% have high enough motivation. This means that high school students in Tuban City in the learning process have a strong desire and desire to learn, encouragement and awareness of learning needs, hopes and aspirations for the future, and are supported by a conducive learning environment.

The results of this study agree with [15] According to Hamdu and Lisa said that learning motivation affects science learning achievement in elementary schools. This means that motivation has a very important role in learning both at the elementary school level to the high school level, students have motivation in learning, so their learning achievement will be good. Conversely, if students have bad habits in learning, then their learning achievement will be low. Based on the results of the tabulation of answers on each learning motivation, it can be concluded that the highest value is an award in learning which states that students will have high motivation if in learning students are given rewards or rewards.

The role of the teacher in the learning process should pay more attention to students. Teachers in giving rewards such as giving praise, numbers, and prizes. While the lowest score of answers on the tabulation of learning motivation there is a learning drive and need, namely students in learning the urge to learn is lacking, this is because students in learning consider that learning is only an obligation not as a need. So that students learn only at certain times such as daily tests, midterm tests, thus student learning cannot be maximized. Agree with [16] which states that the more rither or the higher the student's learning motivation, the student's learning outcomes increase.

3) The Relationship Between Teacher Professional Competence and Learning Motivation to Learning Achievement Together

The relationship between teacher professional competence and learning motivation together on the learning achievement of grade IV students at SD Negeri 1 Aimadidi there is a significant relationship based on the results of a questionnaire that has been distributed by researchers to all grade IV students of SD Negeri 1 Airmadidi, it can be known the value of teacher professional competence and learning motivation together on student achievement at SD Negeri 1 Airmadidi, Looking at the results of regression calculations using SPSS carried out, values are obtained in the calculation table, it can be seen that Fcalculate (25.249) >Ftable (3.32) and significance F (0.000) < 0.05, so that the null hypothesis is rejected and alternative hypotheses are accepted, thus there is a relationship between the variables of teacher professional competence, learning motivation together with student achievement.

This is in line with research from [17]. Teacher Professional Competence, Learning Motivation Related to Economic Understanding of Class Xi Social Studies Students at SMA Negeri 1 Gondang, The calculated t value on the variable teacher professional competence (X1) is 2.316 with a significance level of less than 5%, which is 0.023. This means that the professional competence of teachers (X_1) is partially significantly related to

economic understanding (Y). the magnitude of the relationship between teacher professional competence (X_1) to economic understanding (Y) is 1.44%. Learning motivation (X_2) of 9.306 with a significance level of less than 5% which is 0.000. This means that learning motivation (X_2) is partially significantly related to economic understanding (Y). the magnitude of the relationship between learning motivation (X_2) to economic understanding (Y) is 23.42%. Learning style (X_3) of 3.894 with a significance level of less than 5% which is 0.000. This means that learning style (X_3) partially has a significant effect on economic understanding (Y). the magnitude of the influence of learning style (X_3) on economic understanding (Y) is 4.08%.

[18], explained that "Teacher competency standards are measures set or required in the form of mastery of knowledge and behavior for a teacher to be qualified to occupy functional positions in accordance with the field of duty, qualifications and level of education.

Abraham Maslow (1908-1970) was a humanist psychologist who argued that humans could work toward a better life. Maslow suggested the existence of five levels of basic human needs. These five levels of basic needs are then used as a key understanding in studying human motivation.[19]

The results of research that have been conducted by researchers state that simultaneously the professional competence of teachers and the learning motivation of grade IV students in science subjects at SD Negeri 1 Airmadidi are jointly related to student learning outcomes. Based on calculations proven Fcalculate (25.249) >Ftable (3.32) and significance value F (0.001) < 0.05, with this result H0 is rejected and Ha is accepted, which means that the independent variables of the study, namely teacher Professional Competence (X_1) and Learning Motivation (X_2) are simultaneously significantly related to Learning Achievement (Y). In these data, it can be known that the variables of teacher professional competence and learning motivation are related to learning achievement. Based on these results, it can be concluded that the factors that are related to learning motivation generally consist of within themselves, namely student learning motivation and derived from the teacher's professional competence Each factor must be considered carefully starting from learning preparation to the end of learning. In order for the quality of learning and student achievement to be maximized, cooperation from various parties such as families, schools, and communities is needed.

CONCLUSIONS

Based on data analysis and discussion conducted in this study, the researcher concluded several things as follows:

Teacher Professional Competence is significantly related to student science learning achievement in grade IV, so it can be said that there is a meaningful relationship between teacher professional competence and student science learning achievement in grade IV SD Negeri 1 Airmadidi.

Learning Motivation is significantly related to the science learning achievement of students in grade IV, so it can be said that there is a meaningful relationship between learning motivation and science learning achievement of students in grade IV SD Negeri 1 Airmadidi.

Teacher professional competence and learning motivation together are significantly related to student science learning achievement in grade IV, so it can be said that there is a meaningful relationship together between teacher professional competenceand learning motivation to student science learning achievement in grade IV SD Negeri 1 Airmadidi.

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