The Influence of Self-Efficacy on IPAS Literacy Skills Reviewed from Students' Achievement Motivation

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Abstract: IPAS literacy is an essential skill for students to understand and apply natural and social science concepts in daily life. Psychological factors such as self-efficacy and achievement motivation play a crucial role in enhancing students' IPAS literacy skills. This study employs a quantitative approach to investigate the influence of self-efficacy on IPAS literacy skills through achievement motivation among fifth-grade students of Frater Bakti Luhur Elementary School in Makassar for the 2024/2025 academic year. The independent variable in this study is self-efficacy, the intervening variable is achievement motivation, and the dependent variable is IPAS literacy skills. The population consists of all fifth-grade students of Frater Bakti Luhur Elementary School, totaling four classes. One class was designated as the pilot class (36 students), while the remaining three classes served as the research sample, comprising 108 students. Data were collected using a self-efficacy questionnaire, an achievement motivation questionnaire, and an IPAS literacy skills test. This study adopts a causative research design to analyze the relationship between two or more variables, both directly and indirectly. The data analysis technique used is path analysis with a path field model. The analysis results indicate that the IPAS literacy skills and achievement motivation of fifth-grade students are categorized as moderate, while self-efficacy is categorized as low. The path analysis results show that: 1) Self-efficacy has a direct positive and significant influence on students' IPAS literacy skills with a coefficient of 0.142. 2) Achievement motivation has a direct positive and significant influence on students' IPAS literacy skills with a coefficient of 0.145. 3) Self-efficacy has a direct positive and significant influence on students' achievement motivation with a coefficient of 0.358. 4) Self-efficacy has an indirect positive and significant influence on IPAS literacy skills through achievement motivation with a coefficient of 0.016.

Keywords: Self-efficacy; Achievement motivation; IPAS literacy skills; Path analysis; Causative research

Introduction

Critical and creative thinking is the ability needed by a person to use abstract concepts in explaining more complex phenomena, making hypotheses, predictions, or questioning and identifying the limitations of scientific data. This is the focus of each level of education for the development of learning management. One form of learning development for critical and creative thinking is literacy.

IPAS (Natural and Social Science) literacy is a fundamental skill that helps students understand and apply scientific concepts in daily life. This ability not only supports learning in school but also shapes critical thinking and problem-solving skills, which are essential in modern life. Therefore, understanding the factors that

influence IPAS literacy is vital for improving the quality of education.

Self-efficacy is an individual's belief in their ability to complete tasks and achieve goals. Previous studies have shown that high self-efficacy contributes to better academic performance since students who believe in their capabilities are more motivated to learn and overcome challenges. However, research on the impact of self-efficacy in the context of IPAS literacy remains limited, making this study relevant in filling that gap.

Achievement motivation drives students to achieve better learning outcomes. Highly motivated students tend to be more persistent, more active in seeking information, and more effective in their learning strategies. By identifying the role of achievement motivation as an intervening variable in the relationship between self-efficacy and IPAS literacy, this research provides new insights into how to develop more effective learning systems.

The literacy skills of students in Indonesia based on the results of the PISA (*Programme for International Student Assessment*) test held by the OECD (*Organisation for Economic Co-operation and Development*) in 2022 show that many Indonesian students have literacy skills below international standards. Indonesian students obtained an average score of 359 in literacy, compared to the OECD average of 476. This puts Indonesia in a lower position on an international scale. In general, Indonesian students are still limited to simple and not abstract basic science skills. Optimal literacy achievement cannot be achieved without adequate supporting factors. Two important factors that play a role in improving literacy skills are *self-efficacy* and motivation to achieve. According to Bandura in Monica Pedrazza, *et. al*, (2013) explains that *self-efficacy* is a belief in a person's ability to succeed in a certain situation. Self-efficacy provides the basis for human motivation, well-being, and personal achievement. This happens because they believe that the actions they take can achieve the desired results, even though they have little incentive to act or to endure in the face of difficulties (Hidayat, 2011:156).

Winkel (2004) states that achievement motivation is the driving force within an individual to achieve success and engage in activities where success depends on personal effort and abilities. McClelland (as cited in Khairani, 2014) explains that the need for achievement is a mental force in humans to perform activities better, faster, more effectively, and more efficiently than those carried out previously, that essentially, achievement behavior is determined by the desire to achieve a specific goal.

At the elementary school level, Natural and Social Sciences (IPAS) literacy is one of the main focuses in the

educational curriculum. IPAS literacy includes a basic understanding of scientific and social concepts, as well as the ability to apply that knowledge in real-life contexts. Good IPAS literacy skills are expected to help students develop the insights and skills needed to face future challenges. The stage of cognitive development, changes in students' behavior and attitudes also affect their academic ability to understand more abstract and complex concepts. Fifth grade students are probably at this level where they begin to develop better logical thinking and problem-solving skills, so that they are ready to explore more in-depth scientific and academic topics. In addition, fifth grade students are on the verge of transitioning to higher education (grade 6 and high school) so they need to be given insight into their readiness to face greater academic challenges in the future.

Frater Bakti Luhur Elementary School is committed to developing holistic and collaborative education to students and realizes the importance of science and technology literacy in the learning process. For approximately 3 years at Frater Bakti Luhur Elementary School, the author observed the learning process, discussions with students, and interviews with educators and education staff, found several things that became the main problem, including, (1) IPAS literacy skills that were not as expected. This can be seen from the results of standardized tests and classroom observations where students have not been able to use abstract concepts to explain more complex phenomena, make hypotheses and predictions. In this regard, IPAS literacy skills are also read on school education report cards which have not experienced a significant increase. (2) students' *self-efficacy* is not optimal. Cognitively, they understand the scientific concepts they have learned but lack confidence in applying this understanding. (3) the motivation for student achievement varies greatly. Some learners have a high motivation to excel and learn hard, while others show low motivation to excel which can affect their involvement in the learning process and their learning outcomes. Based on the description above, the author conducted a study with the title, " The Influence of Self-Efficacy on IPAS Literacy Skills Reviewed from Student's Achievement Motivation at Frater Bakti Luhur Elementary School".

Method

This study uses causative research with a quantitative research approach because the data or information collected is manifested in the form of numbers or qualitative data that are raised (*scoring*). It is said to be causative because this study seeks the causal

influence of the independent variable (X_1) on the bound variable (Y) through the intervening variable (X_2). The research design used is a causal research design because the research method used explains the causal relationship between variables and also describes the influence between variables. The following is the flow used in this research, as shown in Figure 1.
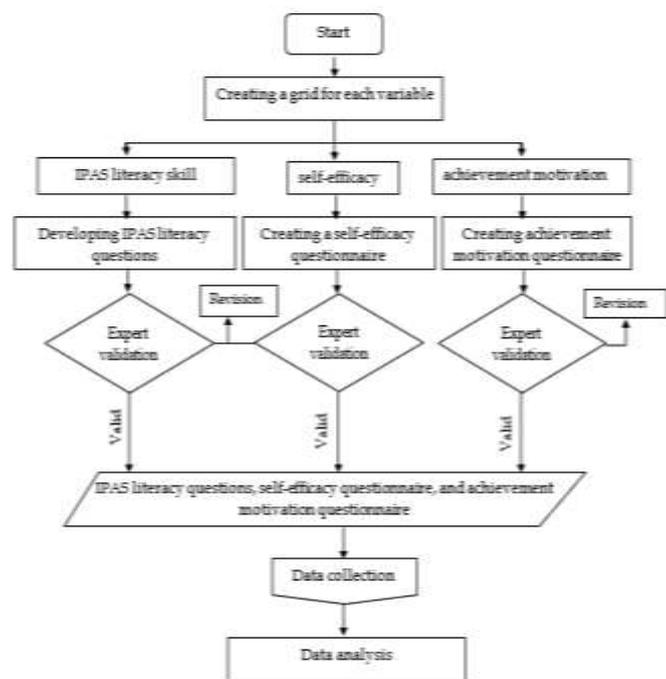

Figure 1. Research Flowchart

The technique used is path *analysis* of the terrain path model. In this study, there are three variables, namely the independent variable, namely self-efficacy, the dependent variable, namely the literacy IPAS, and the intervening variable, namely achievement motivation. The relationship between variables can be depicted as shown in Figure 2.
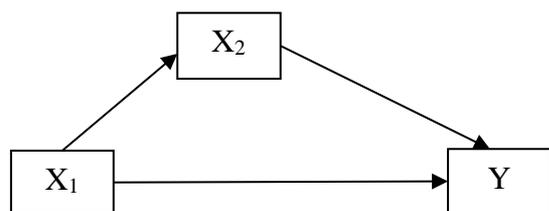

Figure 2. Relationship Between Variables

Information:
X_1: self-efficacy
X_2: achievement motivation
Y: IPAS literacy ability

The population in this study is students in fifth grade of Frater Bakti Luhur Elementary School for the 2024/2025 academic year consisting of four study groups. Researchers took the entire population to be tested. One class is the test subject and the other three classes are the research sample. In other words, the researcher used a saturated sample. This is done to obtain more diverse data and consider the potential for students to be unserious in taking the test or filling out questionnaires if the sample does not involve all students in the population because they consider it to be only research that has no effect on their learning process. In addition, the researcher considers the principle of justice for all students in the population.

The measuring tools used are instruments in the form of self-efficacy questionnaires, achievement motivation questionnaires, and IPAS literacy skills test sheets. All instruments are developed by the researcher himself based on theoretical studies. The questionnaire used *a Likert* scale that was modified into four answer choices. All instruments have gone through a validation process both theoretically and empirically so that valid and reliable instruments are obtained consisting of 34 statements of self-efficacy questionnaires, 38 statements of achievement motivation questionnaires, 20 questions of the IPAS literacy ability test.

The data analysis techniques used in this study are descriptive analysis and inferential analysis. Hypothesis testing using multiple regression analysis, then t-test and F test with IBM *SPSS for windows release 29.0 calculations.* Before the hypothesis test is carried out, the prerequisite tests for analysis are first carried out, namely the normality test, linearity test, multicollinearity test, and heteroscedasticity test.

The normality test uses the Kolmogorov Smirnov *test* at a significance level of 0.05. The results of *the Kolmogorov Smirnov* normality test showed that *Asymp. The Sig* on *Unstandardized Residual* is worth 0.200. Because of the value of *Asymp. Sig* is greater than 0.05, then it can be concluded that the data is normally distributed.

The linearity test uses *Deviation from Linearity* at a significance level of 0.05. Two variables are said to be linear if p-sig > α (0.05). The results of the X_1 test on Y obtained a Sig value. *Deviation from Linearity* 0,218. The value is greater than 0.05, which means that there is a significant linear relationship between the variables. Furthermore, the results of the X_2 test on Y obtained a Sig value. *Deviation from Linearity* 0.244. The value is greater than 0.05, which means that there is a significant linear relationship between the variables.

The results of the multicollinearity test conducted on the independent variable (independent variable) showed that the two independent variables had the same tolerance value of 0.872 and more than 0.1. In

addition, the VIF value of both variables is 1.147 less than 10.00. Therefore, it can be concluded that there is no multicollinearity between independent variables in the regression model used in the study. The independent variables in this study also meet the requirements of multicollinearity. The results of the heteroscedasticity test showed that the value *of Sig.* was 0.768 for the self-efficacy variable and 0.250 for achievement motivation. Both are greater than 0.05. Therefore, it can be concluded that there is no heteroscedasticity in the variables used in this study.

Inferential analysis uses path analysis. In path analysis, independent and dependent influences can be both direct and indirect. The indirect influence of an independent variable on the dependent variable is through another variable called the intermediate variable (intervening).

Result and Discussion

The results of the descriptive analysis of the data for each variable obtained will be described as follows:

Description of self-efficacy in IPAS learning

Data on self-efficacy in learning science and technology was obtained from a questionnaire consisting of 34 statements with a total of 108 respondents in fifth grade of Frater Bakti Luhur Elementary School for the 2024/2025 academic year. The following is a distribution table of trends in self-efficacy data in IPAS learning.

Table 1. Distribution of Self-Efficacy Trends

Category	Interval	Frequency	Percentage (%)
Very Low	34-53	0	0
Low	54-73	0	0
Medium	74-93	0	0
High	94-113	73	67.592
Very High	114-136	35	32.407
Total		108	100.0

Based on Table 1 above, it can be seen that the highest frequency is in the interval of 94-113, namely 73 students or as much as 67.592%. Thus, it can be concluded that the respondents' assessment of the variables of self-efficacy in IPAS learning is high category. Based on the results of the analysis of each indicator, it can be seen that the average percentage of self-efficacy indicators is 80.21% or 86.62 students who can meet each indicator, while 19.79% or 21.37 other students do not meet each indicator.

Partially, the indicator of realizing their skills is in the low category with only 69.44% or 75 students who can realize their skills in facing the given tasks, while 30.56% or 33 students are less able to realize their skills in facing the given tasks. This means that students still lack confidence in the skills they have, and it can even happen that students do not have the expected skills in IPAS learning which includes critical thinking skills (reasoning about a problem, expressing opinions or ideas, studying and solving problems), communication skills (interaction between students and with teachers through questions and answers or discussions), collaboration (working with various parties between yourself, friends, teachers, family, and the community), and creative and innovative (producing something new, or making a work with your creativity).

Description of achievement motivation in IPAS learning

Data on achievement motivation in IPAS learning was obtained from a questionnaire consisting of 38 statements with a total of 108 respondents in fifth grade of Frater Bakti Luhur Elementary School for the 2024/2025 academic year. Based on the results of the analysis of each indicator, it can be found that the average percentage for the achievement motivation indicator was 80% or 86.4 students who met all indicators while 20% or 21.6 students did not meet each indicator. Partially, indicators to do creative things in learning and actively seek learning resources has the lowest percentage, namely 75% or 81 students respectively. There are still 25% or 27 students who are not creative in learning and 25% or 27 students only learn from one source of books and are not actively looking for other sources of learning. The following is a distribution table of the trend of achievement motivation data in IPAS learning.

Table 2. Distribution of Achievement Motivation Trends

Category	Interval	Frequency	Percentage (%)
Very Low	38-60	0	0
Low	61-83	0	0
Medium	84-106	0	0
High	107-129	97	89.815
Very High	130-152	11	10.185
Total		108	100.00

Table 2 shows that the highest frequency is 97 students and is in the interval of 107-129 or as much as 89.815%. Thus, it can be seen that the respondents' assessment of the variables of achievement motivation in IPAS learning is included in the high category.

Description of IPAS literacy skills

Data on IPAS literacy skills obtained from the IPAS literacy test which consisted of 20 questions with a total of 108 respondents in fifth grade of Frater Bakti Luhur

Elementary School for the 2024/2025 academic year. Questions in the form of multiple choice. The correct answer has a score of one and the wrong score is zero. The ideal maximum total score is 20. The following is a distribution table of trends in IPAS literacy data.

Table 3. Distribution Trends IPAS Literacy

Category	Interval	Frequency	Percentage (%)
Very Low	0-3	0	0
Low	4-8	0	0
Medium	9-12	24	22.22
High	13-16	63	58.33
V.High	17-20	21	19.44
Total		108	100

Table 3 shows the highest frequency, namely 63 students in intervals of 13-16 or as much as 58.33%. This indicates that the results of the IPAS literacy test are in the high category. Based on the results of the analysis of each indicator, it can be seen that the average percentage for the IPAS literacy indicator is 75% or 81 students have met all indicators while 25% or 27 students do not meet each indicator.

Partially, indicator knowing ways to preserve the environment, such as the causes of ecosystem damage, maintaining the balance of the ecosystem is the lowest indicator, namely 26% or 28 students who know ways to preserve the environment, such as the causes of ecosystem damage, and maintaining the balance of the ecosystem while 74% or 80 students who do not know.

Before the calculation was carried out to test the causality model using the path analysis model (*path analysis*), then it is necessary to have data on research results that have been tested and meet the requirements. Furthermore, the analysis used in processing data is path analysis. Path analysis is used to describe and test the model of the relationship between variables in the form of cause and effect. Through path analysis, it will be possible to prove whether the path diagram made is proven or not. The path diagram can be seen in Figure 2.
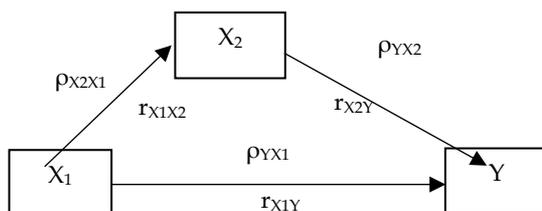

Figure 2. Relationship of X_1 and X_2 to Y

Information
r_{X2X1} : path coefficient X_1 to X_2
ρ_{YX1} : path coefficient X_1 to Y
ρ_{YX2} : path coefficient X_2 to Y
r_{X1X2} : correlation coefficient X_1 to X_2
r_{X1Y} : correlation coefficient X_1 to Y
r_{X2Y} : correlation coefficient X_2 to Y

Figure 2 shows three correlation coefficients, namely r_{X1X2}, r_{X1Y}, and r_{X2Y} and three path coefficients, namely ρ_{X2X1}, ρ_{YX1}, and ρ_{YX2}. The path coefficient shows the direct influence of the independent variable on the non-dependent variable. Meanwhile, the correlation coefficient shows the relationship of the independent variable to the non-independent variable. The results of the correlation coefficient calculation can be seen in table 4.

Table 4. Pearson Correlation Test Results Data

		Self-efficacy (X_1)	Achievement motivation (X_2)	IPAS literacy (Y)
Self-efficacy	r_{cal}	1	0,358	0,196
	r_{tab}	-	0,189	0,189
Achievement motivation	r_{cal}	0,358	1	0,194
	r_{tab}	0,189	-	0,189
IPAS literacy	r_{cal}	0,196	0,194	1
	r_{tab}	0,189	0,189	-

The value of the correlation coefficient obtained for the relationship between self-efficacy and IPAS literacy or r_{X1Y} is 0.196 greater than the r table 0.189, so it can be said that there is a relationship or correlation between the variables of self-efficacy and IPAS literacy because r calculation is greater than r table. This means that if self-efficacy is high, then literacy ability is also high. Meanwhile, the correlation coefficient between achievement motivation and IPAS literacy or r_{X2Y} is known to be 0.194 greater than the r table 0.189 which means that there is a relationship or correlation between achievement motivation and IPAS literacy. This means that if the motivation for achievement is high, then the IPAS literacy is also high. Furthermore, to obtain the value of the path coefficient, calculations are carried out according to the steps in the path analysis. In this case, the value of the path coefficient is calculated and tested for its significance using statistics and if the tested path shows an insignificant coefficient value, the path is eliminated and then the path coefficient is calculated again without including the one that has been removed.

The causal relationship between variables in Sub-Structure I consists of two exogenous variables, namely X_1 and X_2. The structural equations for Substructure I are $\rho_{X2X1} + \varepsilon_1$ and $R2_{X2X1} = 0.358_{X1} + 0.801$ and $R2_{X2X1} = 0.128$. Similarly, the structural equation for Sub Structure II is $Y = \rho_{YX1} + \rho_{YX2} + \varepsilon2$ and $R2_{X2X1Y} = 0.142_{X1} + 0.145_{X2} + 0.873$ and $R2_{X2X1Y} = 0.056$. Based on the analysis of the two sub-structures of the pathway analysis, it is further known that there is a direct and indirect influence of exogenous variables (X_1 and X_2) on endogenous variables (Y). The total effect of self-efficacy (X1) on the literacy ability of IPAS (Y) was 0.1939 or 9.39%.

Achievement motivation (X_2) for IPAS literacy (Y) was 0.145 or 2.1% and self-efficacy (X_1) for achievement motivation (X_2) was 0.358 or 12.82%. Here is a decomposition table of path coefficients.

Table 5. Summary of Path Coefficient Decomposition

Variable	Path Coefficient	Influence		Total
		Immediately	Indirect	
X_1 to X_2	0,358	0,358		0,358
X_1 to Y	0,142	0,142	0,145 x 0,358 = 0,0519	0,193
X_2 to Y	0,145	0,145		0,145
Q1	0,801	0,801		0,801
Q2	0,873	0,873		0,873

Based on the results of the path calculation and hypothesis 1 test, the value of the self-efficacy path coefficient on the IPAS literacy (ρ_{YX1}) was obtained of 0.142 with t calculation of 2.060 greater than t table 1.983 at α = 0.05, so it was concluded that the path coefficient was significant which means that H_0 was rejected. The results of this study show that self-efficacy (X_1) has a direct positive and significant effect on the IPAS literacy (Y).

The calculation of the pathway and hypothesis testing of 2 obtained the value of the coefficient of the achievement motivation pathway to the IPAS literacy (ρ_{YX2}) of 0.145 with t calculation of 2.037 greater than t table 1.983 at α = 0.05, so it was concluded that the path coefficient was significant which means H_0 was rejected. The results of this study show that achievement motivation (X_2) has a direct positive and significant effect on the IPAS literacy (Y).

The results of the path calculation and hypothesis testing obtained the value of the coefficient of the self-efficacy pathway to achievement motivation (ρ_{X2X1}) of 0.358 with t calculation of 3.942 greater than t table 1.983 at α = 0.05, so it was concluded that the path coefficient was significant which means H_0 was rejected. The results of this study show that achievement motivation (X_2) has a direct positive and significant effect on achievement motivation (X_2).

The calculation of the path and hypothesis testing of 4 obtained the value of the coefficient of the self-efficacy pathway on the literacy ability of social science through achievement motivation (ρ_{YX2X1}) of 0.0519 with F calculation of 15.536 greater than F table 3.080 at α = 0.05. Since $\rho_{YX2X1} > 0$, it can be concluded that the path coefficient is significant which means H_0 is rejected. The results of this study show that there is an indirect influence of self-efficacy (X_1) on the IPAS literacy (Y) through achievement motivation (X_2) of 5%.

The Direct Influence of Self-Efficacy on IPAS Literacy Skills

Based on the results of the descriptive analysis, it was shown that the self-efficacy of students in IPAS learning was in the high category with a percentage of 42.6%, while the IPAS literacy was in the medium category with a percentage of 67.592%. This can be interpreted that the average student still lacks confidence in IPAS learning. Similarly, with the literacy ability of science and science, the average student obtained a moderate score. The effect of self-efficacy on IPAS literacy can be seen by the results of the t-test, the significance value of 0.042 < 0.05 while the t calculation is 2.060 > t table 1.983. By also calculating the value of the path coefficient between the variables obtained the price of the self-efficacy path coefficient on the IPAS literacy (ρ_{YX1}) of 0.142, so it can be concluded that the self-efficacy variable has a positive and significant influence on the IPAS literacy. This shows that students with high self-efficacy scores also have high social studies literacy scores. On the other hand, students who have low self-efficacy scores have low IPAS literacy scores. The results of this study are consistent with the research conducted by Noviyanto (2021), which shows that, individually, self-efficacy has a significant influence on students' scientific literacy skills. The higher the self-efficacy, the higher the scientific literacy skills. This finding is also in line with the research conducted by Sari and Suryadarma (2015), which indicates that self-efficacy plays a positive and significant role in improving science learning outcomes, which correlate with the enhancement of students' scientific literacy at SD Negeri in Bengkulu City. Furthermore, Lestari, Mustofa, and Hernawati (2020) presented research results showing a significant positive direct influence between self-efficacy and scientific literacy at SMA Negeri 1 Tasikmalaya, where students with high self-efficacy levels demonstrated better scientific literacy.

The Direct Influence of Achievement Motivation on IPAS Literacy

Descriptive analysis shows that the motivation of students to achieve in IPAS learning is in the high category with a percentage of 89.815%. The achievement motivation test for social science literacy ability is known *to have a Sig* value of 0.044 < 0.05 and t count 2.037 > t table 1.983. By also calculating the value of the path coefficient between variables, the price of the achievement motivation path coefficient on the IPAS literacy (ρ_{YX2}) was obtained at 0.145. So, it can be concluded that the variable of achievement motivation has a positive and significant influence on the IPAS literacy. This shows that students with high achievement

motivation scores have high IPAS literacy scores. On the other hand, students who have low achievement motivation scores also have low IPAS literacy scores. Students with high achievement motivation tend to be more enthusiastic in learning, more resistant to challenges, and more able to achieve better learning outcomes. High achievement motivation can increase learning effectiveness because motivated students are more likely to respond positively to various learning strategies implemented by teachers. Students who have high achievement motivation tend to show greater interest and effort in learning.

The results of this study are consistent with the research conducted by Wiarsana (2020), which found that achievement motivation has a direct influence of 0.165 on students' scientific literacy. This indicates that the higher the students' achievement motivation, the better their scientific literacy skills. Further research by Syamsinar (2022) showed that achievement motivation has a direct, positive, and significant influence of 0.4624 on the physics learning outcomes of 11th-grade students at SMA Negeri 2 Gowa. This finding is also reinforced by Arafah et al. (2020) in their research report conducted at SMAN 8 Makassar, which examined the relationship between self-efficacy, achievement motivation, and physics learning. Their study confirmed that achievement motivation has a direct relationship or positive influence on physics learning. This is further supported by the research of Wiarsana, Adnyana, & Widiana (2023), which stated that achievement motivation influences scientific literacy skills in elementary schools in Semarang.

The Direct Influence of Self-Efficacy on Students' Motivation Achievement

The self-efficacy test on the motivation of students to achieve was known to have a *Sig value* of 0.001 < 0.05 and t count 3.942 > t table 1.983. By also calculating the value of the path coefficient between variables, the price of the self-efficacy path coefficient against the motivation for path achievement (ρ_{X2X1}) is obtained by 0.358. So, it can be concluded that the self-efficacy variable has a positive and significant influence on achievement motivation. This shows that students with high self-efficacy scores also have high achievement motivation scores. On the other hand, students who have low self-efficacy scores also have low achievement motivation scores.

The results of this study are supported by research conducted by Abdulah (2014), which examined the influence of self-efficacy on the achievement motivation of eighth-grade students in Malang. The study found that self-efficacy and achievement motivation have a

direct, positive, and significant correlation. The higher the students' self-efficacy, the higher their achievement motivation to attain better learning outcomes. Similarly, Noviyanto (2021) demonstrated that, individually, self-efficacy has a significant influence on achievement motivation. Individuals with high self-efficacy also tend to have high achievement motivation. This finding is reinforced by Latifah (2018), who stated that self-efficacy has a significant effect on the achievement motivation of fourth-grade elementary school students in Kulon Progo Regency. This aligns with the theory that self-efficacy serves as a foundation for human motivation, well-being, and personal achievement. This occurs because individuals believe that their actions can produce the desired outcomes, even when there is little external incentive to act or when they must persevere through challenges (Hidayat, 2011).

Indirect Influence of Self-Efficacy on IPAS Literacy Through Achievement Motivation

The results of the self-efficacy test on the IPAS literacy through motivation for achievement were obtained *Sig* 0.045 < 0.05 and F calculated 15.536 > F table 3.080. By also calculating the value of the path coefficient between variables obtained, the price of the self-efficacy path coefficient on the IPAS literacy through achievement motivation (ρ_{YX2X1}) is 0.0519. Because 0.0519 > 0, there is a positive and significant indirect influence of self-efficacy on the IPAS literacy through achievement motivation.

The results of this study are in line with the research carried out by Arafah, *et.al* (2020) which examines the relationship between self-efficacy, achievement motivation, and physics learning. The study concludes that the self-efficacy of relationships positive to physics learning through achievement motivation. While achievement motivation has a direct relationship or influence positively to physics learning. Thus, it can be stated that students with high self-efficacy will have a strong will or drive in them to achieve the desired achievements. Students who have high self-efficacy are aware of their potential, believe, and are confident in their abilities in facing the tasks given and independently develop their potential to be more active and creative in learning to achieve better achievements. So, it can be assumed that self-efficacy is a component that plays a role in improving the literacy ability of science and science.

Conclusion

Based on the results of data analysis and discussion, the following conclusions were obtained: The IPAS

literacy skills and achievement motivation of fifth-grade students at Frater Bakti Luhur Elementary School for the 2024/2025 academic year fall into the moderate category, while self-efficacy falls into the low category. Self-efficacy has a direct, positive, and significant influence on the IPAS literacy skills of fifth-grade students at Frater Bakti Luhur Elementary School for the 2024/2025 academic year, with a direct influence path coefficient of 0.142. Achievement motivation has a direct, positive, and significant influence on the IPAS literacy skills of fifth-grade students at Frater Bakti Luhur Elementary School for the 2024/2025 academic year, with a direct influence path coefficient of 0.145. Self-efficacy has a direct, positive, and significant influence on the achievement motivation of fifth-grade students at Frater Bakti Luhur Elementary School for the 2024/2025 academic year, with a direct influence path coefficient of 0.358. Self-efficacy has an indirect influence on the IPAS literacy skills of fifth-grade students at Frater Bakti Luhur Elementary School for the 2024/2025 academic year through achievement motivation as an intervening variable, with an indirect influence path coefficient of 0.0519.

References

Abdullah, M. (2014). Hubungan antara efikasi diri dengan motivasi berprestasi pada siswa kelas VIII di MTs Ahmad Yani Jabung Malang. *Jurnal Pendidikan dan Pembelajaran*, 21(2), 152-157. Retrieved from https://jurnal.adisampublisher.org

Arafah, K. (2020). Self concept and self efficacy's role in achievement motivation and physics learning outcomes. *Opcion*, Ano 36, Especial N0.27: 1607-1623. https://scholar.google.co.id

Arifin, M. (2014). Hubungan Kemampuan Efikasi Diri dan Kemampuan Kependidikan dengan Kesiapan Menjadi Guru TIK Mahasiswa Pendidikan Teknik Informatika. *Jurnal Teknologi dan Kejuruan* Volume 37(2). http://dx.doi.org/10.17977/tk.v37i2.4429

Arikunto, S. (2019). *Prosedur Penelitian: Suatu Pendekatan Praktik (Revisi 2019)*. Jakarta: Rineka Cipta

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W.H. Freeman and Company.

Dewayani, S. (2017). *Menghidupkan Literasi Di Ruang Kelas*. Yogyakarta: PT Kanisius.

Djaali. (2021). *Metodologi Penelitian Kuantitatif*. Bumi Aksara.

Diniaty, A. (2014). Mengungkap Motivasi berprestasi pada Mahasiswa. *Lembaga Penelitian dan Pengabdian* UIN SUSKA Riau, Pekan Baru.

Ghufron, N.M., Rini, R. (2011). *Teori-teori Psikologi*. Yogyakarta: Ar-Ruzz Media.

Gudono. (2011). *Analisis Data Multivariat*. Yogyakarta: BPFE-Yogyakarta.

Hastammang. (2019). Pentingnya Efikasi Diri Peserta Didik. (*The importance of self efficacy in student's self*). *Prosiding Seminar Nasional Biologi V1*. Universitas Negeri Makassar.

Hidayah, N. & Atmoko, Adi. (2014). *Landasan Sosial Buadaya dan Psikologi Pendidikan*. Malang: Gunung Samudera.

Hidayat, D. R. 2(011). *Teori dan Aplikasi Psikologi Kepribadian dalam Konseling*. Bogor: Ghalia Indonesia.

Kemendikbud RI**. (2021). *Panduan Pelaksanaan Pembelajaran Tematik Terpadu Berbasis Literasi*. Jakarta: Kementerian Pendidikan dan Kebudayaan.

Khairani, M. (2014). *Psikologi Belajar*. Yogyakarta: Aswaja Presindo.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Springer.

Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Englewood Cliffs: Prentice Hall.

Latifah, A. (2018). Pengaruh Konsep Diri Terhadap Motivasi Berprestasi Siswa Kelas IV SD/MI. *Basic Education*. 7(29). Retrieved from https://101.203.168.44/pgsd/article/view/13502

Lestari, C.A., Mustofa, R.F., & Hernawati, D. (2020). Hubungan Antara *Self efficacy* dengan Literasi Sains pada Materi Ekosistem di SMA Negeri 1 Tasikmalaya. *Jurnal Bioterdidik: Wahana Ekspresi Ilmiah,* 8 (3), 275-283.

Mardapi, D. (2002). *Pola Induk Sistem Pengujian Hasil KBM Berbasis Kemampuan Dasar SMU*. Jakarta: Depdiknas.

McClelland. (1987). The achieving society. Mckendry, S., & boyd, defining the "independent learner" in uk higher education: staff and students' understanding of the concept. *International Journal of Teaching and Learning*.

Nasrah, Novianti, Kaharuddin. (2021). The effect of self efficacy on students learning outcomes at elementary school. *Jurnal Pendidikan Guru Sekolah Dasar*, 10(5). http://dx.doi.org/10.33578/jpfkip.v10i5.8467

Noviyanto, T.S.H. (2021). Pengaruh Rasa Ingin Tahu dan Percaya Diri Terhadap Kemampuan Literasi Sains Siswa Sekolah Menengah Atas di Kota Tangerang Selatan. *Jurnal Penelitian Sains dan Pendidikan* (JPSP), 1 (2). http://dx.doi.org/10.23971/jpsp.v1i2.3109

OECD. (2019). *PISA 2018 Assessment and analytical framework: science, reading, mathematics and financial literacy*. OECD Publishing. https://www.oecd.org/en/about/programmes/pisa.html

OECD. (2022). *Draft science literacy framework 2015*. Paris: OECD Publishing. https://www.oecd.org/en/about/programmes/pisa.html

OECD. (2022). *Assessment and analytical framework - science, reading, mathematical and financial literacy*. Paris: OECD Publishing. https://www.oecd.org/en/about/programmes/pisa.html

Palangda, L., Kambey, J.P., & Kasangke, J.D.N. (2023). Pengaruh Efikasi Diri dan Dukungan Sosial terhadap Motivasi Berprestasi Siswa di SMKS Kristen Kawangkoan. *Innovative: Journal of Social Science Research*, 3 (4), 8137-8151. Retrieved from https://j-innovative.org/index.php/Innovative/article/view/4574

Pedrazza, M., Trifiletti, E., Berlanda, S., & Bernardo, G. A. D. (2013). Self-Efficacy in Social Work: Development and Initial Validation of the Self-Efficacy Scale for Social Workers. *Social Sciences*, 2(3), 191-207. https://doi.org/10.3390/socsci2030191

Purwanto. (2014). *Evaluasi Hasil Belajar*. Yogyakarta: Pustaka Pelajar.

Purwo, S. (2017). Peran Gerakan Literasi Sekolah dalam Pembelajaran Kreatif- Produktif di Sekolah Dasar. *Jurnal Dewantara*, 3(1). 85-103. Retrieved from https://journal.stkippgritrenggalek.ac.id/index.php/kid/article/view/85

Riduwan & Kuncoro, E. A. (2021). *Cara Menggunakan dan Memaknai Path Analysis*. Bandung: Alfabeta.

Robins, P.S. (2006). *Perilaku Organisasi*. Jakarta: Erlangga.

Rozaldi, A. (2019). Pengaruh Efikasi Diri Terhadap Motivasi berprestasi pada Mahasiswa Bidikmisi di Universitas Airlangga. *Skripsi*. Universitas Airlangga.

Santrock, J. W. (2002). *Life-span development: Perkembangan masa hidup. Eds.5, jilid 1.* (Chusairi, A., & Damanik, J. *Trans*.). Jakarta: Erlangga.

Sarjono, H., & Julianita, W. (2011). *SPSS untuk Penelitian Skripsi*. Jakarta: Salemba Empat.

Sari, D.P., & Suryadarma, I.G.P. (2015). Efikasi Diri dan Pemahaman Konsep IPA dengan Hasil Belajar IPA. *Jurnal Pendidikan dan Pembelajaran*, 21(2), 152-157.

Slavin, R. E. (2008). *Psikologi Pendidikan Teori dan Praktik*. Edisi Kedelapan. Penerjemah: Marianto Samosir. Jakarta: Indeks.

Sugiyono. (2016). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: Alfabeta.

Sugiyono. (2022). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.

Sugiyono. (2023). *Metode Penelitian Studi Kasus*. Bandung: Alfabeta.

Arikunto, S. (2006). *Metode Penelitian Tindakan Kelas*. Jakarta: PT. Bumi Aksara

Suyono. (2011). *Pembelajaran Efektif dan Produktif Berbasis Literasi: Analisis Konteks, Prinsip, dan Wujud Alternatif Strategi Implementasinya di Sekolah.* Malang: Penerbit Cakrawala Indonesia.

Syamsinar. (2022). Pengaruh Keterampilan Berpikir Kritis dan Motivasi Berprestasi Terhadap Hasil Belajar Fisika Peserta Didik di SMA Negeri 2 Gowa. *Tesis*. Universitas Negeri Makassar

UNESCO. (2017). *Science literacy: scientific knowledge for the future of the world*

UNESCO *Education for Sustainable Development* (ESD) https://www.unesco.org/en/sustainable-development/education

Warsito. H. (2009). Hubungan Antara *Self efficacy* dengan Penyesuaian Akademik dan Prestasi Akademik (Studi Mahasiswa FIP Universitas Negeri Surabaya). *Jurnal Ilmiah Ilmu Pendidikan*. IX(1). http://dx.doi.org/10.24036/pendidikan.v9i1.119

Wiarsana, I.M., Adnyana, P.B., & Widiana, I.W. (2023). Pengaruh *Self efficacy*, Motivasi Berprestasi, dan Kebiasaan Belajar Terhadap Literasi Sains Siswa, *Jurnal Pendidikan Sains* (JPS), 1(2), 50-60. http://dx.doi.org/10.26714/jps.8.2.2020.110-120

Widodo. (2009). *Metodologi Penelitian*, Jakarta: Rajawali.

Winkel, W.S. (2004). *Psikologi Pendidikan dan Evaluasi Belajar*. Jakarta: Pt. Gramedia Pustaka Utama.

Yanti, R., Prihatin, T., & Khumaedi, M. (2023). Analisis Kemampuan Literasi Sains Ditinjau dari Kebiasaan Membaca, Motivasi Berprestasi, dan Prestasi

Belajar. *INKUIRI: Jurnal Pendidikan IPA,* 1(1), 17-30. https://doi.org/10.20961/inkuiri.v9i2.27422