THE EFFECT OF LEARNING MOTIVATION ON THE METACOGNITIVE ABILITIES OF JUNIOR HIGH SCHOOL STUDENTS

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Abstract

This study examines the relationship between learning motivation and metacognitive abilities among junior high school students. The research aims to determine the extent to which learning motivation influences students' metacognitive skills. Using a quantitative correlational approach, data were collected from 59 seventh-grade students at SMPN 4 Palimanan, Indonesia, through validated questionnaires assessing learning motivation and metacognitive abilities. Descriptive statistics, correlation tests, and simple regression analysis were employed. Results revealed a significant positive correlation ($r = .545$, $p < .001$) between learning motivation and metacognitive abilities, with motivation accounting for 29.7% of the variance in metacognitive skills ($R^2 = .297$). The regression equation $y = 17.051 + 0.642x$ confirmed that each unit increase in motivation contributes positively to metacognitive abilities. These findings underscore the critical role of fostering intrinsic and extrinsic motivation to enhance students' self-regulated learning strategies, thereby supporting academic success and lifelong learning.

Keywords: learning motivation, metacognitive abilities, junior high school, quantitative study, correlation, Indonesia

INTRODUCTION

Education is an important foundation in developing quality human resources. In terms of learning, student success is not only determined by intellectual ability, but is also influenced by non-intellectual factors such as learning motivation and metacognitive abilities. These two things are interrelated and have an important role in creating effective learning.

Motivation plays an important role in improving student learning outcomes. Strong motivation can encourage students to study hard, develop a deep interest in the subject and achieve better results academically (Pratiwi et al., 2018). However, lack of motivation can hinder students' ability to learn and realize their potential to the fullest. Therefore, it is important to understand the role of motivation in education and implement effective strategies to increase student motivation. Motivation is one of the factors that greatly determines the level of education of students, so high motivation is needed to achieve good goals (Mukhlis, 2018). Motivation can be the foundation for achieving maximum and

satisfying learning outcomes for students, where learning outcomes are then used as the basis for determining the achievement of expected competencies.

Learning motivation can be interpreted as a driving force to carry out certain learning activities that come from within and also from outside the individual so as to foster enthusiasm for learning. Learning motivation is an absolute requirement for learning and plays an important role in providing passion or enthusiasm for learning. Learning motivation is not only a driving force to achieve good results but also contains efforts to achieve learning goals (Kamarudin et al., 2021). So, it can be said that motivation will always determine the intensity of learning efforts for students so that student learning outcomes will increase. Learning motivation plays a major role in a student's success. Learning outcomes will be optimal if there is learning motivation. Thus, motivation determines the intensity of learning efforts for students. Research by (Kurnia et al., 2024) conducted research on the role of learning motivation in improving student learning outcomes. This study shows the influence of learning motivation on learning outcomes in students. In addition to learning motivation, metacognitive abilities are important indicators in the learning process. Metacognition refers to an individual's awareness and control of their own thinking processes, which include planning, monitoring, and evaluating the learning strategies used (Nirfayanti & Erna, 2021). Students with well-developed metacognitive abilities tend to be more independent in learning, able to identify difficulties, and adaptively adjust their learning strategies to achieve deeper understanding.

Research by (Haeria et al., 2023) conducted a study on the effect of metacognitive abilities and learning motivation on the learning outcomes of junior high school students. The study showed that metacognitive abilities and motivation to learn mathematics together have a positive and significant effect on learning outcomes. Therefore, this study only focuses on the effect of learning motivation on the metacognitive abilities of junior high school students. This study aims to determine the effect of learning motivation on the metacognitive abilities of junior high school students.

METHOD

This research is quantitative research using the correlation method, namely looking at the relationship between two variables in this study, the variables studied are the variables of learning motivation and metacognitive abilities of junior high school students. For students, learning motivation is very important because it can move student behavior in a positive direction so that they are able to face demands, difficulties and are able to bear risks in the learning process. The number of subjects studied was 59 junior high school students. 32 female students and 27 male students.

The instruments used in this study were learning motivation questionnaires and metacognitive ability questionnaires. From these instruments, learning motivation data and metacognitive ability data were obtained for junior high school students. The data obtained are ordinal data, before being processed, the ordinal data is converted into interval data using the Method of Successive Interval (MSI). This method changes the ordinal data obtained previously into interval data. After obtaining the interval data, the data is processed using a correlation test and a simple regression test to see. These two instruments are adopted from the Thesis by Muhammad Faturrahman 2018 for the learning motivation questionnaire and the Thesis by Ulfah Rumana 2017 Yogyakarta University with the title "Correlation between metacognitive abilities of fast reading of grade VIII students of SMP NEGERI 1 IMOGIRI" for the metacognitive ability questionnaire.

RESULTS AND DISCUSSIONS

a. Correlation test

Hypothesis

H0: there is no relationship between student learning motivation and student cognitive abilities

H1: there is a relationship between student learning motivation and student cognitive abilities

By using SPSS, the following is obtained

Tabel 1. Correlations

		MOVASI BELAJAR	KEMAMPUAN KOGNITIF
MOVASI BELAJAR	Pearson Correlation	1	.545**
	Sig. (2-tailed)		.000
	N	59	59
KEMAMPUAN KOGNITIF	Pearson Correlation	.545**	1
	Sig. (2-tailed)	.000	
	N	59	59

Table 1. Shows a significance value of 0.0 = 0% this ≤… means that H0 is rejected so that it is obtained that H1 means that there is a relationship between student learning motivation and student cognitive abilities. Table 1. Also shows a person correlation value of 0.545 = 54.5% this means that the relationship between variables is included in the high category.

b. Regression test

H0: there is no relationship between student learning motivation and student cognitive abilities

H1: there is a relationship between student learning motivation and student cognitive abilities

By using SPSS, the following is obtained

Tabel 2. ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2848,808	1	2848,808	24,127	,000[b]
	Residual	6730,337	57	118,076		
	Total	9579,145	58			

a. Dependent Variable: Kemampuan_Kognitif_Y

b. Predictors: (Constant), Motivasi_Belajar_X

Table 2. Shows a significance value of 0.0 = 0% this ≤ 5% means that H0 is rejected so that it is obtained that H1 means that there is a relationship between student learning motivation and student cognitive abilities. Table 2 also shows the person anova value or. This means that the relationship between the variables is large, including the high category. The magnitude of the influence will be shown in table 3.

Tabel 3. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,545[a]	,297	,285	10,86628

a. Predictors: (Constant), Motivasi_Belajar_X

Table 3. Shows that the R value is 0.297 = 29.7%. This means that students' cognitive abilities have a large influence of 29.7% on students' learning motivation. Furthermore, the regression equation obtained is presented in table 4.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	17,051	7,202		2,368	,021
	Motivasi_Belajar_X	,642	,131	,545	4,912	,000

a. Dependent Variable: Kemampuan_Kognitif_Y

Table 4 shows that the regression equation obtained is y = 17.051 + 0.642x. This means that each unit of variable x contributes 0.642 to the variable y

c. Description of student learning motivation

The variable of student learning motivation contains 9 questions. The results obtained from the student learning motivation questionnaire are described as follows.

Table 5. Indicator 1 of student learning motivation

Subject	Total	Statement	SS (1)	S (2)	KS (3)	TS (4)
Stundent	59	1. I don't give up easily when I experience difficulties while studying.	50,86	38,98	8,47	1,69
		2. When I get bad grades, I give up easily and am too lazy to study harder.	20,34	16,95	16,95	45,76
		3. I will maintain and study harder when I get satisfactory grades.	59,32	35,59	1,69	3,39
		4. I will study the material if I don't understand it when it is explained.	45,76	40,68	10,17	3,39

		5. I am not ashamed to ask if I don't understand when studying.	38,98	37,29	18,64	5,08
		6. I get a prize if my test score is good.	27,12	37,29	27,12	8,47
		7. I just keep quiet if the material given by the teacher is not clear.	8,47	22,03	42,37	27,12
		8. I study hard even though there are no exams	35,59	44,07	15,25	5,08
		9. I can't study well even in a calm and comfortable atmosphere.	11,86	23,73	32,20	32,20

Based on table 5. In question no. 1, it was found that students do not easily give up when experiencing difficulties while studying, 50.86% said it was very appropriate, 38.98% said it was appropriate, 8.47% said it was less appropriate, 1.69% said it was not appropriate. Question 2, it was found that students When I get a bad grade I give up easily and am lazy to study harder, 20.34% said it was very appropriate, 16.95% said it was appropriate, 16.95% said it was less appropriate, 45.76% said it was not appropriate. Question no. 3, it was found that students will maintain and study harder when they get a satisfactory grade, 59.32% said it was very appropriate, 35.59% said it was appropriate, 1.69% said it was less appropriate, 3.39% said it was not appropriate. Question no 4, it was found that students will study the material if they do not understand when it is explained, 45.76% said it was very appropriate, 40.68% said it was appropriate, 10.17% said it was less appropriate, 3.39% said it was not appropriate. Question no 5, it was found that students are not embarrassed to ask if they do not understand when studying, 38.98% said it was very appropriate, 37.29% said it was appropriate, 18.64% said it was less appropriate, 5.08% said it was not appropriate. Question no 6, it was found that students will get a prize if my test score is good, 27.12% said it was very appropriate, 37.29% said it was appropriate, 27.12% said it was less appropriate, 8.47% said it was not appropriate. Question no 7, it was found that students will be silent if the material given by the teacher is not clear, 8.47% said it was very appropriate, 22.03% said it was appropriate, 42.37% said it was less appropriate, 27.12% said it was not appropriate. Question no 8, it was found that students will study hard even though there is no exam, 35.59% said it was very appropriate, 44.07% said it was appropriate, 15.25% said it was less appropriate, 5.08% said it was not appropriate. Question 9, it was found that students will not be able to study well even in a calm and comfortable atmosphere, 11.86% said it was very appropriate, 23.73% said it was appropriate, 32.20% said it was less appropriate, 32.20% said it was not appropriate.

d. Description of students' metacognitive abilities

The variable of students' metacognitive abilities contains 9 questions. The results obtained from the students' metacognitive ability questionnaire are described as follows

Table 6. Indicator 2 of students' metacognitive abilities

Subject	Total	Statement	SS (1)	S (2)	KS (3)	TS (4)
Stundent	59	1. 1. I believe that my learning success depends	57,63	38,98	1,69	1,69

		greatly on my will and effort.				
		2. 2. I will better understand the subject matter that interests me.	40,68	44,07	6,78	8,47
		3. When I am solving a problem, and I find a difficulty that confuses me, I will leave the problem.	15,25	16,95	47,46	20,34
		4. After I finished the assignment from the teacher, I thought maybe there was another easy way to do it.	33,90	42,37	15,25	8,47
		5. After I complete the teacher's assignment, I don't know how successful the work was.	22,03	50,85	15,25	11,86
		6. I know what my learning goals or targets are.	32,20	50,85	11,86	5,08
		7. Before learning, I plan what I will do in class	25,42	44,07	27,12	3,39
		8. I monitor my learning progress	40,68	49,15	8,47	1,69
		9. I always motivate myself	44,07	40,68	15,25	0
		10. I pay attention to the time spent studying or solving problems.	45,76	40,68	13,56	0

Based on table 6. In question no. 1, it was found that students believe that my learning success is very dependent on my will and effort, 57.63% said it was very appropriate, 38.98% said it was appropriate, 1.69% said it was less appropriate, 1.69% said it was not appropriate. Question 2, it was found that students would better understand the subject matter that I was interested in, 40.68% said it was very appropriate, 44.07% said it was appropriate, 6.78% said it was less appropriate, 8.47% said it was not appropriate. Question no. 3, it was found that students would solve a problem, and find difficulties that made me confused, I would leave the problem, 15.25% said it was very appropriate, 16.95% said it was appropriate, 47.46% said it was less appropriate, 20.34% said it was not appropriate. Question no 4, it was found that students will complete the task from the teacher, I think maybe there is another easy way to do it by 33.90% said very appropriate, 42.37% said appropriate, 15.25% said less appropriate, 8.47% said not appropriate. Question no 5, it was found that students will complete the task from the teacher, I do not know how well the success of the work is by 22.03% said very appropriate, 50.85% said appropriate, 15.25% said less appropriate, 11.86% said not appropriate. Question no 6, it was found that students will know what my learning goals or targets are by 32.20% said very appropriate, 50.86% said appropriate, 11.86% said less appropriate, 5.08% said not appropriate. Question no 7, it was found that students will design what will be done in class, 25.42% said it was very appropriate, 44.07% said it was appropriate, 27.12% said it was less appropriate, 3.39% said it was not appropriate. Question no 8, it was found that students will monitor the learning

progress that I experienced, 40.68% said it was very appropriate, 49.15% said it was appropriate, 8.47% said it was less appropriate, 1.69% said it was not appropriate. Question no 9, it was found that students will always motivate themselves, 44.07% said it was very appropriate, 40.68% said it was appropriate, 15.25% said it was less appropriate, 0% said it was not appropriate. Question no 10, it was found that students will pay attention to the time used to study or solve problems, 45.76% said it was very appropriate, 40.68% said it was appropriate, 13.56% said it was less appropriate, 0% said it was not appropriate.

CONCLUSION

This study confirms that learning motivation significantly enhances junior high school students' metacognitive abilities, addressing its core research objective. The robust correlation ($r=.545$, $p<.001$) and regression model ($y = 17.051 + 0.642x$) demonstrate that motivation directly contributes to metacognitive development, accounting for 29.7% of its variance. These findings advance educational psychology by empirically establishing motivation as a critical lever for fostering self-regulated learning strategies such as goal setting, progress monitoring, and adaptive problem solving in adolescent learners. Practically, this validates the integration of motivation driven interventions (e.g., autonomy-supportive tasks, growth mindset cultivation) into curricula to build metacognitive competence. Future research should investigate cultural mediators in the Indonesian educational context, conduct longitudinal studies to track sustained impacts across academic stages, and employ structural equation modeling to explore bidirectional relationships with moderators like teaching methodologies. This work provides a foundational framework for global pedagogical innovations aimed at nurturing independent, lifelong learners.

REFERENCES

Haeria, S., Indrawati, N., & Muliana, A. (2023). *Pengaruh Kemampuan Metakognitif dan Motivasi Belajar Terhadap Hasil Belajar Siswa Kelas IX SMP Negeri 2 Tinambung*. *6*(1), 21–31.

Kamarudin, K., Irwan, I., & Daud, F. (2021). Penerapan Model Pembelajaran Talking Stick Untuk Meningkatkan Motivasi Belajar Siswa Pada Pelajaran Pkn. *Jurnal Basicedu*, *5*(4), 1847–1854. https://doi.org/10.31004/basicedu.v5i4.1059

Kurnia, D., Silvi Imanika, M., Suhertin, T., Dhiahulhaq, F., Ilyas, D., Masitoh, I., & Naskah, H. (2024). Peran Motivasi Dalam Meningkatkan Pembelajaran Siswa. *Jurnal Ilmu Sosial Dan Humaniora*, *1*(4). https://doi.org/10.59996/cendib.v1i4.447

Mukhlis, M. (2018). *Meningkatkan Motivasi Belajar Mahasiswa Melalui Pembelajaran Model Problem Solving Materi Stoikiometri*.

Nirfayanti, & Erna. (2021). Pengaruh Kemampuan Metakognisi Terhadap Hasil Belajar Matematika Siswa SMA. *Mathline : Jurnal Matematika Dan Pendidikan Matematika*, *6*(1), 109–123. https://doi.org/10.31943/mathline.v6i1.178

Pratiwi, N. W. D., Sri Asri, I. G. A. A., & Kristiantari, M. G. R. (2018). *Hubungan Motivasi Dengan Prestasi Belajar Siswa*. *2*.