

THE RELATIONSHIP BETWEEN SELF-DIRECTED LEARNING AND LEARNING MOTIVATION TOWARDS MATHEMATICS ACHIEVEMENT OF ELEMENTARY SCHOOL STUDENTS IN SD NEGERI 03 KARANGASEM

Ravikasha Azka Azkiya¹, Sukartono²

^{1,2} Fakultas Keguruan dan Ilmu Pendidikan, Universitas Muhammadiyah Surakarta,
Indonesia

Email: rakakasha17@gmail.com, suk917@ums.ac.id

ABSTRACT

This research has the following objectives; 1) Knowing the relationship between independence and learning achievement of low grade students; 2) Knowing the learning motivation of low class students' learning achievement; 3) To find out the joint relationship between independence and learning motivation on the learning achievement of low grade students at SDN 03 Karangasem. This research uses quantitative descriptive research with a correlation design. The research sample consisted of 23 lower class students. The data collection technique uses a valid questionnaire. Test the prerequisites using the normality test and the Kolmogorov Smirnov linearity test. The simple linear regression hypothesis test uses the t test while the multiple regression test uses the F test. The research results show that; 1) There is a significant relationship between learning motivation and mathematics learning achievement of low class students with a significance value of 0.013 at a significance level of 0.05. 2) There is a significant relationship between learning independence and the mathematics learning achievement of low grade students with a significance value of 0.032 at the 0.05 significance level. 3) There is a relationship between learning motivation and learning independence on the mathematics learning achievement of low class students at SD Negeri 03 Karangasem with the F test results in hypothesis testing of 0.000 at a significance level of 0.05.

KEYWORDS *Learning motivation, learning independence, learning achievement*



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International

How to cite:

E-ISSN:

Published by:

Azkiya, R.A et al. (2023). The Relationship Between Self-Directed Learning and Learning Motivation Towards Mathematics Achievement of Elementary School Students in SD Negeri 03 Karangasem. *Journal Eduvest*. 4 (2): 360-181

2775-3727

<https://greenpublisher.id/>

INTRODUCTION

Independence in an educational process is considered crucial because the attitude of independence aims to direct oneself towards positive behavior that can support success in the learning process. With independence, students will be trained and develop habits of performing positive actions, leading to discipline in participating in learning activities. Independence in learning does not mean that students learn alone; instead, students learn with their own initiative without coercion from anyone. Students who possess learning independence will be able to work individually or in groups and dare to express their ideas or thoughts (Kurniawan et al., 2018).

According to Sumarmo (2004: 4), characteristics included in learning independence are that individuals design their learning according to their needs or goals, choose strategies and implement their learning designs, and monitor their learning progress while evaluating their results against specific standards.

Learning motivation can increase the willingness of learners to study, improving and boosting their enthusiasm for positive learning changes. Motivation is not only important for getting learners to engage in learning activities but also determines how many activities or pieces of information they face (Rifa'i and Anni, 2012: 135). According to Sardiman (2012: 83), indicators of learning motivation include diligence in facing tasks, diligence or perseverance in facing difficulties, showing interest in various problems for adults, preferring to work independently, quickly getting bored with routine tasks, being able to maintain one's opinions, not easily letting go of things believed, and enjoying finding and solving problems.

Learning achievement is the success of learners in expressing the maximum performance in mastering the taught material (Azwar, 2020). Factors influencing learning achievement consist of two types: internal factors originating from within the individual, and external factors originating from outside the individual. Internal factors that affect the individual include biological factors covering everything related to physical conditions such as the senses and organs. A healthy physical condition allows focused learning with serious concentration and quick understanding of the lesson material explained by educators. Besides biological factors, there are psychological factors covering everything related to a person's mental condition, such as intelligence, talent, interest, creativity, motives, attention, maturity, and readiness. External factors originating from outside the individual include family environment, school environment, community environment, and time factors (Rosyid, 2021).

All education participants (students, parents, and teachers) certainly desire to achieve high learning achievements as one of the indicators of the success of the learning process. However, in reality, not all learners achieve high learning achievements, and many still achieve low learning achievements. To realize this, attention needs to be given to the independence and learning motivation of learners, which are crucial in influencing the learning process of a student. Both of these factors are related to a student's learning achievement.

The results of Ningtias & Surjanti, (2021) research state that learning independence has a significant influence on the learning outcomes of learners, and similarly, student learning motivation affects the learning outcomes of learners in the

learning process. Tri Sunarsih (2019) shows that the variables of student learning motivation and learning independence with the variable of student learning achievement have a significant relationship. SD Negeri 03 Karangasem, especially in the lower classes, namely grades I, II, and III, shows that learning independence and student learning motivation are generally relatively low. This is evident in students' ability to complete their tasks independently, overcome learning problems, and believe in themselves, which still does not show optimal results. Meanwhile, for their ability to self-regulate during the learning process, it can be considered almost good.

The low level of learning independence is caused by students' difficulty in understanding subjects during the learning process, so when working on problems given by teachers, many students lack confidence and are unwilling to demonstrate their abilities. In addition, the lack of learning independence is indicated by students who often cheat and ask their peers when working on problems. This means that the independence of their learning is still lacking, as students who have independence will be able to overcome their learning problems and manage themselves. The lack of learning motivation is indicated by several conditions where students are lazy, such as sleeping in class, paying little attention to the teacher when explaining subjects.

Based on the background provided, the author formulates the research problem as follows: Is there a relationship between learning independence and learning motivation on the learning achievement of lower-grade students at SD Negeri 3 Karangasem?

The aim of this research is to determine the relationship between learning independence and learning motivation on the learning achievement of lower-grade students at SDN 3 Karangasem. To find out the relationship between learning independence and learning motivation on the learning achievement of lower-grade students at SDN 3 Karangasem.

RESEARCH METHOD

The type of research used is quantitative descriptive research with correlation design to determine the relationship between the dependent variable to the independent variable. The population was taken from all low grade students (1, 2, and 3) of SDN 03 Karangasem with a total sample of 23 students (Sugiyono, 2018).

The data collection technique in this study used questionnaires to obtain data on the level of learning independence and learning motivation of low-grade students. The questionnaire validity trial was conducted at SDN 03 Karangasem involving 10 students in grade 3. Test the questionnaire instrument using validity and reliability tests, before carrying out the hypothesis test, a prerequisite test was carried out using the normality test and Kolmogorov Smirnov linearity test. The simple linear regression hypothesis test uses the t test while the multiple regression test uses the F test using the help of Microsoft Excel.

RESULT AND DISCUSSION

a. Frequency of Learning Motivation

The data on learning motivation were obtained from the questionnaire filled out by lower-grade students at SD N 03 Karangasem. The criteria for each category are presented in the following table:

Table 1 Distribution of Learning Motivation Frequency

Score Interval	Categori	Frequency	Percentage
< 49	Very Poor	0	0%
50-59	Poor	0	0%
60-69	Fair	3	13%
70-80	Good	17	74%
81-100	Very Good	3	13%
Total		23	100%

Source: Data Processed 2024

From Table 1, it can be seen that out of 23 lower-grade students, 3 students (13%) have a fair category of learning motivation, 17 students (74%) have a good category of learning motivation, and 3 students (13%) have a very good category of learning motivation. It can be concluded that the majority of students have learning motivation in the good category (74%).

Despite being categorized as good, students' learning motivation, however, lacks recognition in the form of praise, and in addition to that, the environmental factors in their learning environment are not supportive of the implementation of mathematics learning.

b. Frequency of Learning Independence

Data on learning independence were obtained from the questionnaire filled out by lower-grade students at SD N 03 Karangasem. The criteria for each category are presented in the following table:

Table 2 Distribution of Learning Independence Frequency

Score Interval	Categori	Frequency	Percentage
< 49	Very Poor	0	0%
50-59	Poor	0	0%
60-69	Fair	1	4%
70-80	Good	18	78%
81-100	Very Good	4	18%
Total		23	100%

Source: Data Processed 2024

From Table 2, it can be seen that out of 23 lower-grade students, 1 student (4%) has a fair category of learning independence, 18 students (78%) have a good

category of learning independence, and 4 students (18%) have a very good category of learning independence. It can be concluded that the majority of students have learning independence in the good category (78%).

Students' learning independence is categorized as good. However, there is still a lack of confidence in students regarding their abilities, their efforts to develop their potential, and self-confidence in performing tasks independently, indicating that students do not understand the material presented by the teacher and are afraid to ask questions.

c. Frequency of Mathematics Learning Achievement

Data on learning achievement were obtained from the questionnaire filled out by lower-grade students at SD N 03 Karangasem. The criteria for each category are presented in the following table:

Table 3 Distribution of Learning Achievement Frequency

Score Interval	Categori	Frequency	Percentage
< 49	Very Poor	0	0%
50-59	Poor	0	0%
60-69	Fair	0	0%
70-80	Good	9	40%
81-100	Very Good	14	60%
Total		23	100%

Source: Data processed in 2024

From Table 3, it can be seen that out of 23 lower-grade students, 9 students (40%) have a good category of learning achievement, and 14 students (60%) have a very good category of learning achievement. It can be concluded that the majority of students have learning achievement in the very good category (60%).

DISCUSSION

a. Relationship between Learning Motivation (X1) and Mathematics Learning Achievement (Y) of Lower-Grade Students

Learning motivation is the drive that arises from within or outside students, capable of instilling enthusiasm and eagerness to learn, and providing direction to learning activities so that the desired goals can be achieved.

The hypothesis testing in this study used t-test and F-test with a significance level of 0.05. The results of the hypothesis testing, presented in the table below, were obtained using Microsoft Excel software:

Table 4. t-Test Results

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t</i>	<i>Sig.</i>
Constant	37,133	4,256	8,725	0,000
X1	0,116	0,044	2,622	0,13

The Relationship Between Self-Directed Learning and Learning Motivation Towards Mathematics Achievement of Elementary School Students in SD Negeri 03 Karangasem

Based on the data in Table 4, it is known that the relationship between learning motivation and mathematics learning achievement of lower-grade students has a significance value of $0.013 < 0.05$. Therefore, H1 is accepted, and it can be concluded that there is a significant relationship between learning motivation and mathematics learning achievement of lower-grade students at SD Negeri 03 Karangasem. The data on learning motivation were obtained from the questionnaire filled out by lower-grade students at SD N 03 Karangasem.

Tabel kriteria masing-masing kategori dipaparkan pada tabel berikut:

Table 5. Learning Motivation (X1) and Learning Achievement (Y)

	SS	df	MS	F	Sig.
Linearity	177.321	1	177.321	45.613	.000
Deviation from Linearity	65.771	16	4.111	1.057	.447

Table 5 shows that the significance value of the learning motivation variable is >0.05 (0.447), indicating that the submitted data is linear. The results of the hypothesis test indicate a significance value of 0.013 for the learning motivation variable's relationship with mathematics learning achievement at a significance level of 0.05. This suggests a significant relationship between learning motivation and mathematics learning achievement of lower-grade students at SD Negeri 03 Karangasem. This is consistent with the research conducted by (I. D. Pratiwi & Laksmiwati, 2016; N. W. D. Pratiwi et al., 2018), which found a significant relationship between motivation and students' learning achievement in Grade V at SD Negeri Gugus 1 Kuta Selatan for the Academic Year 2016/2017 with a significance value of 0.151 at a significance level of 0.05. Motivation plays a crucial role in learning achievement, as students who are motivated tend to be more enthusiastic about learning. When individuals are motivated to learn, they make efforts to learn well and diligently.

b. Relationship between Learning Independence (X2) and Mathematics Learning Achievement (Y) of Lower-Grade Students

Learning independence is one of the supporting factors for students' success in achieving optimal learning achievement. Students with learning independence can understand themselves, and generally, students with a positive self-understanding tend to succeed academically.

Table 6. t-Test Results

	Coefficients	Standard Error	t	Sig.
Constant	37,133	4,256	8,725	0,000
X2	0.174	0,077	2,240	0,32

Table 6 shows that the relationship between learning independence and mathematics learning achievement of lower-grade students has a significance value of $0.032 < 0.05$. Therefore, H2 is accepted, and it can be concluded that there is a

significant relationship between learning independence and mathematics learning achievement of lower-grade students at SD Negeri 03 Karangasem.

Table 7. Learning Independence (X2) and Learning Achievement (Y)

	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>
Linearity	238.702	1	238.702	81.318	.000
Deviation from Linearity	11.691	12	.974	.332	.975

Table 7 shows that the significance value of the learning independence variable is >0.05 (0.975), indicating that the submitted data is linear. The results of the hypothesis test indicate a significance value of 0.032 for the learning independence variable's relationship with mathematics learning achievement at a significance level of 0.05. This suggests a significant relationship between learning independence and mathematics learning achievement of lower-grade students at SD Negeri 03 Karangasem. This aligns with the research conducted by (Hidayat & Sutirna, 2020), stating that there is a significant influence of students' learning independence on the mathematics learning achievement of Grade VIII students at SMP 12 Tambun, with a significance value of $0.000 < 0.05$. Learning independence is the behavior of students in achieving learning goals independently without depending on others. In this regard, students can develop learning strategies to perform tasks and responsibilities well and independently (Dedyerianto, 2019). Therefore, if lower-grade students at SDN 03 Karangasem have high learning independence, it will enhance their achievement in learning mathematics; conversely, low learning independence may result in lower mathematics learning achievement.

c. Relationship between Learning Motivation and Learning Independence with Mathematics Learning Achievement of Lower-Grade Students.

Learning achievement is a result obtained by students in the form of behavioral changes as expected after undergoing learning efforts. Learning achievement can be shown in numbers or letters given by an educator to students after participating in the learning process and taking tests or exams.

The results of simultaneous hypothesis testing using Microsoft Excel software are presented in the table below:

Table 8. F-Test Results

	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig. F</i>
Regression	275.893	2	91.964	69.563	.000*
Residual	.228	34	1.322		
Total	320.842	37			

The Relationship Between Self-Directed Learning and Learning Motivation Towards Mathematics Achievement of Elementary School Students in SD Negeri 03 Karangasem

Based on Table 8, the significance value is $0.000 < 0.05$. Therefore, it can be concluded that there is a significant relationship between learning motivation, learning independence, and mathematics learning achievement of lower-grade students at SD Negeri 03 Karangasem. This means that the hypothesis is accepted, or in other words, learning motivation and learning independence have a significant relationship with the learning achievement of lower-grade students in mathematics.

Motivation for learning and learning independence are interrelated independent variables (X1-X2), meaning that there is a relationship between learning motivation and learning independence with mathematics learning achievement of lower-grade students at SD Negeri 03 Karangasem. This is supported by the F-test results in the hypothesis test, with a significance value of 0.000 at a significance level of 0.05. This is consistent with the research conducted by (Salmah et al., 2020), which found a significant relationship between learning independence and motivation with students' learning outcomes at a significance value of 0.000.

Ningtiyas (2021) stated that learning independence significantly influences students' learning outcomes, and motivation to learn affects students' learning outcomes in the learning process. Furthermore, research by Tri Sunarsih (2019) showed that the variables of learning motivation and learning independence of students have a significant relationship with students' learning achievement.

From the analysis of the data discussed, it can be concluded that there is a simultaneous relationship between learning motivation and learning independence with the learning achievement of lower-grade students in mathematics at SDN 03 Karangasem. This indicates that learning independence and learning motivation play a crucial role in improving the learning outcomes or achievements of students.

CONCLUSION

Based on the results of research and data analysis regarding the relationship between learning independence and learning motivation on mathematics learning achievement of low-grade students at SD Negeri 03 Karangasem, it was concluded that: a. There is a significant relationship between learning motivation and mathematics learning achievement of low grade students at SD Negeri 03 Karangasem with a significance value of 0.013 at a significant level of 0.05. b. There is a significant relationship between learning independence and mathematics learning achievement of low-grade students at SD Negeri 03 Karangasem with a significance value of 0.032 at a significant level of 0.05.

There is a joint relationship between learning motivation and learning independence on the learning achievement of mathematics subjects of low grade students at SD Negeri 03 Karangasem with the acquisition of F test results on the hypothesis test of 0.000 at a significance level of 0.05.

REFERENCES

- Antika. (2019). Pengaruh Penerapan Model Pembelajaran Kooperatif Tipe Think-Pair-Square terhadap Kemampuan Pemahaman Konsep Matematis ditinjau dari Kemampuan Awal Matematika Siswa SMP. *Juring (Journal for in Mathematics Learning)*, 2(2), 118–129.
- Astuti, E. P. (2015). Kemandirian Belajar Matematika Siswa SMP/ Mts di Kecamatan Prembun 65. *JPSE*, 65–75.
- Badrun Nafi' Udin, Wiwin Fachrudin Yusuf, (2021). Prinsip Kebebasan Belajar Imam Al-Ghazali Dalam Sistem Among Prespektif KI Hajar Dewantara, *SAMAWA: Jurnal Hukum Keluarga Islam*, Vol. 1 No. 2.
- Effendi, Mursilah, & Mujiono. (2018). Korelasi Tingkat Perhatian Orang Tua dan Kemandirian Belajar dengan Prestasi Belajar Siswa. *Jurnal Ilmiah Multi Sciences*, 10(1), 17–23.
- Hidayat, M. A., & Sutirna, S. S. (2020). Pengaruh kemandirian belajar terhadap prestasi belajar matematika. *Prosiding Sesiomadika*, 2(1c).
- Kurniawan, H. R., Elmunsyah, H., & Muladi, M. (2018). Perbandingan penerapan model pembelajaran project based learning (PJBL) dan think pair share (TPS) berbantuan modul ajar terhadap kemandirian dan hasil belajar rancang bangun jaringan. *JP (Jurnal Pendidikan): Teori Dan Praktik*, 3(2), 80–85.
- Ningtias, P. W., & Surjanti, J. (2021). Pengaruh Motivasi Belajar dan Kemandirian Belajar Peserta Didik Terhadap Hasil Belajar Ekonomi Pada Pembelajaran Daring Dimasa Covid-19. *Edukatif: Jurnal Ilmu Pendidikan*, 3(4), 1660–1668.
- Pratiwi, I. D., & Laksmiwati, H. (2016). Kepercayaan Diri dan Kemandirian Belajar Pada Siswa SMA Negeri æX. *Jurnal Psikologi Teori Dan Terapan*, 7(1), 43–49.
- Pratiwi, N. W. D., Asri, I. G. A. A. S., & Kristiantari, M. G. R. (2018). Hubungan Motivasi Dengan Prestasi Belajar Siswa. *International Journal of Elementary Education*, 2(3), 192–201.
- Rosyid, M. Z. (2021). *Prestasi Belajar (edisi 2)*. CV Literasi Nusantara Abadi.
- Salmah, A., Relita, D. T., & Suriyanti, Y. (2020). Hubungan Kemandirian Belajar Dan Motivasi Berprestasi Dengan Hasil Belajar Mata Pelajaran Ekonomi Siswa Kelas Xi Sman 01 Belimbing. *Jurnal Pendidikan Ekonomi (JURKAMI)*, 5(1), 45–54.
- Sugiyono, D. (2018). Metode penelitian kuatintatif, kualitatif dan R & D/Sugiyono. *Bandung: Alfabeta*, 15(2010).
- Supanti, S., & Hartutik, I. (2018). Peningkatan Hasil Belajar Dan Kemandirian Siswa Pada Materi Sistem Koloid Dengan Metode Inkuiri. *Jurnal Inovasi Pendidikan Kimia*, 12(1), 2031–3038.
- Vivi Herlina, *Panduan Praktis Mengolah Data Kuesioner Menggunakan SPSS*, (Jakarta: PT Gramedia, 2019).
- Wiralodra, U., & Barat, J. (2018). Matematika Siswa SMP Melalui Model Learning CYCLE 5E. *JES-MAT*, 4(1), 13–24.