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The Relationship Between Learning Discipline And The Science Learning Outcomes Of Fourth Grade Students Of SD Negeri 091277 Siantar Estate Pematangsiantar

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Abstract

This study aims to analyze the relationship between learning discipline and the learning outcomes of Natural and Social Sciences (IPAS) of fourth-grade students of SD Negeri 091277 Siantar Estate Pematangsiantar. The study used a quantitative approach with a correlational ex-post facto design. The study population was 50 fourth-grade students, and the entire population was sampled through a total sampling technique. Data collection was carried out using a questionnaire to measure learning discipline, documentation of IPAS learning outcomes, and observations as supporting data. Data analysis included descriptive statistics and Pearson Product Moment correlation tests using SPSS version 21. The results showed that the level of student learning discipline was in the high category, as were the IPAS learning outcomes which were dominated by the high category. The results of the correlation test showed a positive and significant relationship between learning discipline and IPAS learning outcomes with a value of r = 0.482, greater than r table = 0.219 at a significance level of 5%. The coefficient of determination showed that learning discipline contributed 23.2% to IPAS learning outcomes, while 76.8% was influenced by other factors outside the study. These findings suggest that improving learning discipline can contribute to improved student learning outcomes. Therefore, teachers and parents need to collaborate to foster disciplined learning habits through ongoing reinforcement, supervision, and motivation to support successful science learning.

Keyword: learning discipline, learning outcomes, science, elementary school, ex-post facto, correlation..

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INTRODUCTION

Education is essential for the survival of humankind and for the advancement of the nation. Education can develop abilities and shape a person's character, leading to a knowledgeable, creative, independent, and responsible individual. Education is one of the most important things every human being must possess, equipping them to develop their potential, developing spiritual and religious strength, self-control, personality, intelligence, noble character, and the skills necessary for themselves, society, the nation, and the state. Through education, humans acquire knowledge and thus can optimally develop their potential (Helmawati, 2014:22).

Education is a conscious, planned effort to create a learning environment and process that allows students to actively develop their potential, developing spiritual and religious strength, self-control, personality, intelligence, morals, life skills, general knowledge, and the skills necessary for society, as defined by law. According to Law Number 20 of 2003, the goal of national education is to develop graduate competency qualifications and meet graduate competency standards. Article 35 of Law Number 20 of 2003 states that graduate competency standards encompass student attitudes, knowledge, and skills, which must be met in educational units at both primary and secondary levels. Through education, individuals can develop a better character. According to the Ministry of Education and Culture, education is generally defined as conscious and planned efforts to create learning environments and evaluation systems for children, actively fostering their abilities.

According to Tambunan (2012: 27), education is a universal activity in human life, as educational endeavors occur everywhere and at all times in the world. Education is essentially a human endeavor to humanize humanity. The "Let's Love the Environment" lesson in elementary schools is expected to provide a platform for students to learn about themselves and their surroundings, including ethnic, linguistic, and religious diversity. Students can learn by determining their attitudes toward their surroundings and how to act in their social environment.

From the above opinion, it can be concluded that education is the initial foundation for developing intellectual potential, personal values, morals, and skills. This can be done consciously to enhance broad insight and knowledge, positive attitudes and behavior, personality, intelligence, and religious morals. The quality of education will be reflected in the performance and competence of teachers as educators who carry out the learning process.

Science and Natural Sciences (IPAS) learning combines the natural sciences (IPAS) and social sciences (IPS) subjects taught at the elementary school (SD/MI) level, which already use

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the Merdeka Curriculum. This integration of the two subjects is implemented because elementary school students' knowledge is still concrete/simple, so the material discussed in the IPS subject focuses on general natural phenomena, such as living and non-living things in nature, and their relationship to human life as social beings.

The Merdeka Curriculum is a curriculum with diverse intracurricular learning and optimized content, allowing students sufficient time to deepen concepts and strengthen competencies. During the learning process, teachers have the flexibility to choose various learning tools, allowing instruction to be tailored to students' learning needs and interests. This curriculum includes projects to strengthen the achievement of the Pancasila student profile. These projects are then developed based on specific themes determined by the government. These projects do not aim to achieve specific learning outcomes and are therefore not tied to subject content.

The core of this Merdeka Curriculum is Freedom to Learn. This concept is designed to allow students to explore their individual interests and talents. For example, if two children in the same family have different interests, the benchmarks used for assessment will differ. Furthermore, children cannot be forced to learn something they dislike, thus providing autonomy and independence for both students and schools. The implementation of the independent curriculum is open to all educational units—elementary, middle, high, vocational, special education, and equivalency schools. Furthermore, educational units determine their choice based on a questionnaire assessing the readiness of the Independent Curriculum implementation, which measures the readiness of teachers, educational staff, and educational units in curriculum development. The most appropriate choice refers to the readiness of the educational unit, so that the implementation of the Independent Curriculum will be more effective if it is more tailored to needs.

The curriculum is a set of regulations containing objectives, content, and learning materials as guidelines for organizing learning activities. The curriculum aims to achieve a higher-quality education. Without an appropriate curriculum, students will not achieve the appropriate learning targets. Of course, everything is tailored to the needs of students in their respective eras. The independent curriculum is a learning method that refers to a talent and interest approach. Students can choose any subject they wish to study based on their passions. In general, the Merdeka Curriculum is a diverse intracurricular learning curriculum. The content is optimized to provide students with sufficient time to deepen concepts and strengthen competencies.

The Merdeka Curriculum has several advantages over the previous curriculum, including:

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(1) More focused and simpler. This curriculum allows students to focus more on essential material and competency development. Furthermore, this curriculum is more in-depth, meaningful, and less rushed.
(2) Much more independent. This means more freedom in terms of learning. This means this curriculum frees students to choose subjects according to their interests, talents, and aspirations.
(3) More interactive. The Merdeka Curriculum is also considered more relevant and interactive. Learning through project-based learning provides students with broader opportunities to actively explore current issues, such as environmental issues, health, and others. (Nugraha, 2022)

According to H. M. Arief Rahman, M.Pd., the independent curriculum is a curriculum that emphasizes national character building and prioritizes a problem-based learning approach and the application of information technology. The Independent Curriculum Academic Study also explains the basic framework, principles, characteristics, and design of the independent curriculum for early childhood education, elementary education, and secondary education. Based on observations conducted at SDN 091277 Siantar Estate, the location is adequate for establishing a school and allowing for teaching and learning activities. This elementary school is very close to residential areas, but this does not hinder the continuity of learning at the elementary school. The subject studied was the Natural and Social Sciences (IPAS) class on Motion, which is also related to the school and classroom environment because it teaches about force and motion, allowing students to apply the learning within the school environment.

In the fourth grade at SDN 091277 Siantar Estate, the lecture method is used. When the teacher delivers and explains the material, only a few students pay attention, while others engage in conversation with their classmates. Many students are reluctant to read when asked to find the main topic. This problem is caused by a lack of student interest and enthusiasm in participating in the lesson, as well as a monotonous learning process that tends to disengage students.

This monotonous learning process makes it difficult to achieve optimal learning outcomes. This is evident from the table of fourth grade student learning outcomes in the 2025/2026 academic year, which shows that only five students out of a total of 24 students completed the learning process, exceeding the specified Minimum Completion Criteria (KKM).

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Table 1. Fourth Grade Science Exam Scores

Class	Passing Minimum Grade	Total Number of students	Grade Minimum Completion	
			Completed	Incomplete
IV	70	23	9 students	14 students
Percentage			40%	60%

(Source: SDN 091277 Siantar Estate)

The data in Table 1 shows that many fourth grade students' learning outcomes in science still do not meet the Minimum Completion Criteria (KKM). Many students do not focus on the teacher's explanations during the learning process and are often unable to answer the teacher's questions verbally or in writing. Furthermore, students are lazy about completing assignments and often disturb their classmates during class, and students are often absent without an excuse. Efforts made by science teachers to improve Indonesian language learning outcomes include assigning assignments and consistently monitoring students to ensure they complete them properly and correctly.

The family is one of the primary role models in instilling discipline. If parents at home teach and educate their children to understand and obey rules from the start, they will be encouraged to follow them. Therefore, discipline should be instilled early in life, both within the family and at school. If implemented properly, it will have a positive impact on students and lead to their success in learning. According to Yusuf (Susanto 2018:116), the importance of discipline for students is that through discipline, children can understand the boundaries of norms and behave in accordance with those norms. In other words, children can control themselves from deviant behavior. Therefore, families and schools are crucial because they have a very strong influence. Discipline can lead students to better behavior, such as being punctual to school, being disciplined in dress, and maintaining a clean school environment. To implement discipline, teachers must play a primary role in implementing it and guiding students so that they can also follow suit.

Likewise, creating a quality and intelligent future generation requires education. Education is not merely about achieving goals; it requires effort. Therefore, it is crucial to provide more constructive guidance to students by establishing learning patterns, such as implementing discipline. Discipline is still lacking among every student, and only a small percentage of schools have students who are able to implement it. This is a factor of the policy implemented by the principal as a leader to be wiser in applying discipline to every teacher and student in it so that the school becomes advanced and has a perspective and students who have been formed with

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the discipline given will be easier to direct and is closely related to learning outcomes.

Students must be able to practice discipline within themselves to develop a learning pattern that benefits them. However, in reality, many students still lack discipline in their studies. Currently, many students are still undisciplined, such as arriving at school late, dressing unkemptly, not wearing complete school attire, doing homework, violating school rules, and littering. The education students receive is not only essential within the school environment but also within the family environment. If discipline is implemented within the family, these habits will carry over to the external environment, such as school.

Therefore, the role of the family, especially parents, is also crucial in fostering discipline. In education, discipline is crucial, especially in learning. Student discipline is still lacking, especially during school hours. Students often fail to pay attention during class, are noisy, and rarely ask questions about lessons they don't understand, which significantly impacts their learning outcomes. Only a small percentage of students achieve good grades on daily tests and assignments; the rest of the students' learning outcomes are less than satisfactory. Therefore, discipline is essential for every student to achieve academic success.

METHODS

1. Research Design

This research is a type of ex-post facto or often called after the fact research in the form of relational. Ex post facto as a research method shows that the treatment of the independent variable has occurred previously, so there is no need to provide treatment, just see its effect on the related variable (Sudjana, 2009). The approach used in this study is a quantitative approach, because the quantitative method is a research method used to research a specific population or sample, data collection using research instruments, quantitative data analysis or statistical data analysis with the aim of testing the established hypothesis. This research was conducted on September 22-27, 2025 and this research was conducted by Researchers at SD Negeri 091277 Siantar Estate.

2. Population and Sample

A population is a generalized area consisting of objects/subjects with certain qualities and characteristics determined by the researcher to be studied and then conclusions drawn (Sugiyono, 2016:117). The population in this study was the fourth-grade students of SD Negeri 091277 Siantar Estate, totaling 50 students. For more details about the population in this study, see Table 2.

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Table 2. Research Population

NO	Class	Gender		Total
		Male	Female	
1.	IV A	15	10	25
2.	IV B	13	12	25
Total				50

Source: SD Negeri 091277 Siantar Estate, September 2025.

A sample is a subset of the population with the characteristics (Sugiyono, 2016:118). The sample in this study was all fourth-grade students of SD Negeri 091277 Siantar Estate, totaling 50 students.

Table 3. Research Sample

NO	Class	Gender		Total
		Male	Female	
1.	IV A	15	10	25
2.	IV B	13	12	25
Total				50

Source: SD 091277 Siantar Estate, September 2025.

The sampling technique used was Total Sampling. This means that the entire population was sampled in this study, as the population size was less than 100 students. This researcher chose fourth grade students, aged 9 years and above, as the research subjects because fourth grade students are already capable of thinking and analyzing the questions in the questionnaire. In other words, fourth grade students are able to

3. Data Collection Method

Data collection techniques are the most important step in research, because the primary goal of research is to obtain data (Sugiyono, 2010). The data collection techniques used in this study were observation, questionnaires, and documentation. The following is a description:

1) Observation

Observations were conducted prior to the research to determine the level of learning discipline possessed by students at SD Negeri 091277 Siantar Estate.

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2) Questionnaire

According to Sugiyono (2015:199), a questionnaire is "a data collection technique conducted by providing respondents with a set of written questions or statements to answer." The questionnaire used in this study was a closed-ended questionnaire presented in the form of statements. The questions in this questionnaire consisted of positive and negative statements. Respondents were asked to provide answers by selecting the answer category provided by placing a checkmark (√) in the provided column. A questionnaire was used to obtain information regarding the learning discipline of fourth-grade students at SD Negeri 091277 Siantar Estate.

3) Documentation

Documentation is "a record of past events; it can be in the form of writings, drawings, or monumental works of a person" (Sugiyono, 2010:329). Documentation in this study was used to obtain data on the names of all fourth-grade students and a list of final exam scores for the odd semester of the 2025/2026 academic year for the subject of Social Studies. Furthermore, the researcher used documentation techniques as evidence of the research implementation. This evidence was in the form of photographs taken during the research process.

To facilitate understanding of the data collection techniques in this study, the data is presented in the following table:

Table 4. Data Collection Method

No.	Data	Data Collection Method (Instrument)
1.	Learning Discipline	Questionnaire
2.	Social Studies Learning Outcomes	Document (Mid-Term Exam Scores for Odd Semester

RESULTS AND DISCUSSION

1. Overview of Fourth-Grade Students' Learning Discipline at Public Elementary School 091277 Siantar Estate

Based on data analysis, the learning discipline of fourth-grade students at Public Elementary School 091277 Siantar Estate is predominantly in the high category, with 35 out of 50 students (45%). Discipline in learning is essential in schools, especially for students. Discipline can guide students in carrying out learning activities. Discipline also serves as a means of educating children to ensure the learning process runs smoothly, so that children realize that discipline in learning will achieve optimal learning outcomes.

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2. Overview of Fourth-Grade Students' Social Studies Learning Outcomes at Public Elementary School 091277 Siantar Estate

Based on data analysis, the learning outcomes of fourth-grade students at Public Elementary School 091277 Siantar Estate are predominantly in the high category, with 35 out of 50 students (70%). Learning outcomes are "the abilities students possess after receiving learning experiences," Winarni (2011:138) explains. These outcomes will not be achieved unless someone engages in learning activities.

3. The Relationship between Learning Discipline and Social Studies Learning Outcomes of Fourth-Grade Students at SD Negeri 091277 Siantar Estate

Based on the Pearson Product Moment correlation analysis using SPSS 21.0 software, the relationship between learning discipline and social studies learning outcomes of fourth-grade students at SD Negeri 091277 Siantar Estate obtained an r-value of 0.482. This value indicates a positive (moderate) relationship between the learning discipline variable (X) and the social studies learning outcome variable (Y). This means that the higher the learning discipline (X), the higher the social studies learning outcomes (Y). Conversely, the lower the learning discipline (X), the lower the social studies learning outcomes (Y).

Furthermore, the r-table in this study was 0.219 at a 5% significance level. This indicates that r count 0.482 > r table 0.219, thus the hypothesis in this study is proven: there is a significant positive relationship between learning discipline and the science learning outcomes of fourth-grade students at SD Negeri 091277 Siantar Estate. The contribution of learning discipline (X) to science learning outcomes (Y) is 23.2%, with the remaining 76.8% influenced by other external factors.

CONCLUSION

The results of this study on the Relationship between Learning Discipline and Social Studies Learning Outcomes of Fourth-Grade Students at SD Negeri 091277 Siantar Estate can be summarized as follows:

1. The majority of students' learning discipline is in the high category, with 23 out of 50 students (46.25%).
2. The majority of students' social studies learning outcomes are in the high category, with 27 out of 50 students (71.25%).
3. There is a positive and significant relationship between learning discipline and fourth-grade students' social studies learning outcomes at SD Negeri 091277 Siantar Estate. This can be seen

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from the results of the Pearson Product Moment correlation analysis hypothesis test, which obtained r = 0.482 > r = 0.219.

REFERENCES

Amri, S. (2016). *Proses Pembelajaran Kreatif dan Inovatif dalam Kelas.* Jakarta: Prestasi Pustakaraya.

Helmawati. (2014). *Pendidikan Karakter di Sekolah dan di Rumah*. Jakarta: PT Rineka Cipta.

Ihsana El Khuloqo. (2017). *Psikologi Pendidikan Islam*. Jakarta: Kencana.

Majid, A. (2017). *Perencanaan Pembelajaran*. Bandung: PT Remaja Rosdakarya.

Mustofa. (2015). *Psikologi Pendidikan*. Bandung: Remaja Rosdakarya.

Nugraha, D. (2022). *Kurikulum Merdeka: Konsep dan Implementasi*. Jakarta: Direktorat Jenderal Pendidikan.

Panjaitan, M. B., Siagian, A. F., Purba, N., Herman, H., Sutikno, S., Sinaga, Y. K., and Sihombing, S. D. (2025) Fostering the Use of Talking Stick Learning Model on the Critical Thinking Ability in Science Learning. *Journal of Curriculum and Teaching, 14(4), 14-25*. DOI: https://doi.org/10.5430/jct.v14n4p14

Panjaitan, M. B., Siagian, A. F., Judijanto, L., Mufarizuddin, M., Herman, H., Saputra, N., & Mamadiyarov, Z. (2026). Comparison of Students Science Literacy Abilities Using Inquiry and Cooperative Learning Models. *Aptisi Transactions on Technopreneurship (ATT), 8(1), 63–73*. https://doi.org/10.34306/att.v8i1.640

Panjaitan, M., Judijanto, L., Sherly, S., Simanjuntak, H., and Herman, H. (2026) Leveraging WordWall Teaching Media as Tools to Improve Learning Outcomes in Natural Science Subject. *Journal of Curriculum and Teaching, 15(2), 248-258.* https://doi.org/10.5430/jct.v15n2p248

Permendikbud No. 23 Tahun 2016 (2016) *Permendikbud No. 23 Tahun 2016 tentang Standar Penilaian Pendidikan*. Jakarta.

Putri, R., & Wibowo, A. (2023). Hubungan Disiplin Belajar dan Prestasi Belajar IPA Siswa Sekolah Dasar. *Jurnal Pendidikan Dasar Indonesia.*

Rahmawati. (2022). Pengaruh Disiplin Belajar terhadap Prestasi Akademik Siswa SD. *Jurnal Pendidikan Dasar*.

Rusman. (2016). *Model-Model Pembelajaran*. Jakarta: PT Raja Grafindo Persada.

Santrock, J. W. (2007). *Educational Psychology.* New York: McGraw-Hill.

Saragih, M. (2020). Pendekatan Pembinaan Kedisiplinan dalam Meningkatkan Motivasi dan Hasil

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Belajar Siswa. *Jurnal Ilmu Pendidikan*.

Sardiman, A. M. (2011). *Interaksi dan Motivasi Belajar Mengajar*. Jakarta: Raja Grafindo Persada.

Slameto. (2015). *Belajar dan Faktor-Faktor yang Mempengaruhinya*. Jakarta: Rineka Cipta.

Sugiyono. (2007). *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, dan R&D.* Bandung: Alfabeta.

Susanto, A. (2018). *Teori Belajar dan Pembelajaran di Sekolah Dasar*. Jakarta: Kencana.

Tulus, T. (2019). *Peran Disiplin pada Perilaku dan Prestasi Siswa*. Jakarta: Gramedia.

Undang-Undang Nomor 20 Tahun 2003 (2003) *Undang-Undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional*. Jakarta

Winarni, R. (2011). B*elajar dan Pembelajaran IPA di SD*. Jakarta: Universitas Terbuka

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