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The Effect of The Self-Directed Learning (SDL) Model on The Learning Engagement and Outcomes of Fourth-Grade Students at SDN 1 Mangkung

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ABSTRACT

This study aimed to determine the effect of the Self-Directed Learning (SDL) model on the learning engagement and outcomes of fourth-grade students in the Indonesian language subject at SDN 1 Mangkung. This study employed a quasi-experimental method with a pretest-posttest control group design. The population consisted of 396 students from SDN 1 Mangkung (N=202) and SDN 2 Mangkung (N=194). A sample of 40 students was selected using cluster random sampling. Data on learning engagement were collected through questionnaires, while learning outcomes were measured using a multiple-choice test. The data were analyzed using an independent samples t-test with SPSS version 22. The results revealed two key findings. First, the learning engagement of students taught with the SDL model was significantly higher than that of students taught with the conventional model. The mean score for the experimental group increased from a pre-test score of 42.65 to a post-test score of 50.05. The t-test analysis yielded a t-value of 5.241, which is greater than the t-table value of 2.024, with a significance of $p < 0.05$ (Sig. 2-tailed = 0.000). Thus, the null hypothesis (H_0) was rejected, and the alternative hypothesis (H_1) was accepted. Second, student learning outcomes also showed a significant improvement in the SDL group, with the mean score increasing from 37.65 to 59.00. The t-test resulted in a t-value of 9.087, exceeding the t-table value of 2.024 ($p < 0.05$). This indicates that H_0 was rejected and H_a was accepted. In conclusion, the SDL model has a significant positive effect on both student engagement and learning outcomes.

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INTRODUCTION

The transformation of the global educational landscape in the 21st century demands a fundamental shift from the traditional teaching paradigm toward student-centered learning. National education policies, such as the implementation of the *Kurikulum Merdeka* (Merdeka Curriculum) in Indonesia, explicitly encourage the creation of a learning ecosystem that facilitates the development of essential competencies rather than the mere transfer of knowledge (Leuwol et al., 2023). These competencies include critical thinking, creativity, collaboration, and, equally important, learning autonomy (Hidayat & Prastowo, 2021). Learning autonomy, or the capacity of individuals to become autonomous learners, is

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regarded as the cornerstone for realizing the concept of lifelong learning—an absolute prerequisite for surviving and thriving in the era of information and technological disruption (Saputra, 2020).

Despite these ideal demands becoming a central discourse, the reality of learning practices in many Indonesian classrooms still reveals a significant gap. Field observations consistently report the dominance of conventional, one-way (teacher-centered) teaching methods. This model positions the teacher as the primary source of knowledge and students as passive recipients (Wulandari & Surjono, 2019). A direct consequence of this model is low student learning engagement. Learning engagement, defined as the mental, emotional, and physical involvement of students in the learning process (Ningsih, Saputra, & Suryadmaja, 2025; Suryadmaja, 2025b, Sardiman, 2018), is a critical variable that is often overlooked. This lack of engagement manifests as minimal student initiative to ask questions, express opinions, engage in constructive debate, or seek alternative learning resources beyond those provided by the teacher (Sinar, 2018).

Logically and empirically, the level of learning engagement has direct implications for student learning outcomes (Putri, 2020). When students are not actively involved, cognitive processes such as information processing, knowledge schema formation, and learning transfer are not optimized (Wahyuningsih, 2020). Active involvement allows students to construct deeper, more personal meaning and understanding, rather than simply memorizing facts for short-term evaluation purposes (Astuti, 2019). Consequently, a passive learning environment not only hinders the development of autonomy but also directly contributes to unsatisfactory cognitive learning outcomes. This problem creates a counterproductive cycle: passive teaching methods produce inactive students, which in turn leads to poor learning outcomes.

To break this cycle, pedagogical intervention through innovative learning models is urgently needed. One model that theoretically aligns most closely with the goals of fostering autonomy and engagement is Self-Directed Learning (SDL). Pioneered by Knowles (1975) (as cited in Rasyid, 2019), SDL is essentially a process in which individuals take the initiative to diagnose their learning needs, formulate goals, identify resources, select and implement learning strategies, and evaluate their own learning outcomes. In the context of modern education, SDL is no longer interpreted as "learning alone" without guidance. Instead, SDL is a metacognitive competence that must be cultivated (Suryadmaja, 2025; Suryadmaja, Ardiyansyah, & Purwati, 2015, Loeng, 2020). The role of the teacher in this model transforms from a "lecturer" to a "learning facilitator," whose task is to guide, provide resources, and create an environment that supports student autonomy (Guglielmino & Guglielmino, 2020).

Several studies have provided preliminary evidence for the effectiveness of SDL. For instance, a study by Pratama and Sariyasa (2021) demonstrated that the implementation of SDL successfully improved students' mathematical problem-solving skills. Similarly, research by Rahman et al. (2022) found a strong positive correlation between self-directed learning readiness and the academic achievement of health science students. However, despite the widely reported positive impacts of SDL, research that specifically and simultaneously examines the influence of the SDL model on two crucial variables—namely, learning

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engagement (representing the process) and learning outcomes (representing the product)—within a single, controlled experimental framework remains limited. Many studies tend to focus on only one variable or employ correlational designs that cannot establish causal relationships. Addressing this research gap is crucial for providing more robust empirical evidence to educators and policymakers regarding the effectiveness of SDL as a comprehensive learning intervention model.

Based on the urgency to improve the quality of learning processes and outcomes, as well as the research gap outlined above, this study is designed to make a significant empirical contribution. It aims to examine the influence of implementing the Self-Directed Learning (SDL) model on both student learning engagement and learning outcomes simultaneously. Specifically, this research seeks to answer the following question: Is there a significant influence of the Self-Directed Learning (SDL) model on student learning engagement and learning outcomes when compared to a conventional teaching model? The findings of this study are expected to provide a strong scientific foundation for educational practitioners in adopting and adapting learning models oriented toward fostering student autonomy and academic success in the 21st century.

METHOD

This study employed a quantitative approach with a quasi-experimental design. Specifically, the Nonequivalent Control Group Design was used. This design was chosen because randomizing individual subjects is often impractical in formal educational settings. Instead, pre-existing groups (intact classes) were used as the experimental units (Sugiyono, 2018). The design involved two groups: an experimental group that received the treatment (the Self-Directed Learning model) and a control group that followed the conventional learning model. The dependent variables (learning engagement and learning outcomes) were measured before (pre-test) and after (post-test) the intervention was administered to both groups.

Population and Sample

The target population for this research comprised all fourth-grade students from SDN 1 Mangkung and SDN 2 Mangkung. The sample consisted of two classes: the fourth-grade class at SDN 1 Mangkung (n=20) served as the experimental group, and the fourth-grade class at SDN 2 Mangkung (n=20) was the control group. The total sample size was 40 students. The quantitative data were analyzed using SPSS software, version 22.0 for Windows.

Data Collection Techniques

1. Questionnaire: A questionnaire consisting of 12 statements was used to collect data on learning engagement (Y_1).
2. Tests: Tests were used to gather data on learning outcomes (Y_2). The tests consisted of a pre-test (administered before the treatment) and a post-test (administered after the treatment), comprising 15 multiple-choice questions on the Indonesian language subject. The test items were developed based on a blueprint aligned with the learning objectives.

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3. Documentation: This technique was used to collect supporting data, such as student attendance lists, previous semester grades, and the course syllabus.

Data Analysis Techniques

The data were analyzed using statistical software (SPSS). The analysis involved the following steps:

1. Descriptive Analysis: Data were summarized using mean, standard deviation, minimum, and maximum values to provide a general overview of learning engagement and outcomes for both groups (Hartono, 2019).
2. Hypothesis Testing: Although the initial plan suggested using Multivariate Analysis of Variance (MANOVA) (Field, 2018), the final analysis to test the hypotheses was conducted using an Independent Samples T-Test after prerequisite assumption tests were met. This test was used to compare the means of the two independent groups (experimental and control).

RESEARCH RESULTS

Prerequisite Tests

Normality Test

The Kolmogorov-Smirnov test was used to determine if the data were normally distributed, with a significance level set at $\alpha = 0.05$.

Table 1. Normality Test Results for Learning Engagement Data

Tests of Normality							
	Kelas	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Result	Experimental Class Pretest (SDL)	0.154	20	0.200*	0.939	20	0.227
	Experimental Class Posttest (SDL)	0.131	20	0.200*	0.965	20	0.654
	Control Class Pretest (Conventional)	0.185	20	0.071	0.948	20	0.332
	Posttest for the Control Class (Conventional)	0.170	20	0.131	0.919	20	0.093

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Based on Table 1, the significance values from the Kolmogorov-Smirnov test for the pre-test and post-test of learning engagement in the experimental group (Sig. = 0.200) and the control group (pre-test Sig. = 0.071; post-test Sig. = 0.131) were all greater than 0.05. This indicates that the learning engagement data for both groups were normally distributed.

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Table 2. Normality Test Results for Learning Outcomes Data

		Tests of Normality					
	Kelas	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	Df	Sig.
Result	Experimental Class Pretest (SDL)	0.153	20	0.200*	0.949	20	0.352
	Experimental Class Posttest (SDL)	0.152	20	0.200*	0.901	20	0.043
	Prettest Control Class (Conventional)	0.184	20	0.076	0.941	20	0.248
	Post-test Control Class (Conventional)	0.191	20	0.055	0.918	20	0.091

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Based on Table 2, the significance values obtained from the Kolmogorov-Smirnov test for the experimental group's pre-test and post-test data were 0.200. For the control group, the significance values were 0.076 for the pre-test and 0.055 for the post-test. As all significance values are greater than 0.05, it can be concluded that the data for the pre-test and post-test learning outcomes in both groups were normally distributed.

Homogeneity Test

The test for homogeneity of variances yielded a significance value of 0.386 for the learning engagement data. For the learning outcomes data, the significance value was 0.820. Since both values are greater than 0.05, it was concluded that the variances between the experimental and control groups were equal (homogeneous) for both dependent variables.

Hypothesis Testing

The hypothesis was tested using an Independent Samples T-Test, a statistical analysis designed to compare the means of two independent groups.

Analysis of Learning Engagement

As shown in the data from Appendix 7 (p. 88), the mean score for learning engagement in the experimental group increased from 42.65 (pre-test) to 50.05 (post-test). The t-test analysis yielded a calculated t-value (t-value) of 5.241 with a probability (p) of 0.000. This value was compared to the critical t-value (t-table) of 2.024 (for df = 38 at a 5% significance level). Since the calculated t-value is greater than the critical t-value (5.241 > 2.024) and the significance value is less than 0.05 ($p < 0.05$), the null hypothesis (H_0) was rejected, and the alternative hypothesis (H_1) was accepted. This indicates a statistically significant difference in the average learning engagement, favoring the group using the Self-Directed Learning model.

The control group also showed an increase in mean engagement scores, from 40.40 (pre-test) to 44.35 (post-test). The t-test for this group resulted in a calculated t-value of 3.109 ($p = .004$), which is also greater than the critical t-value (3.109 > 2.024), indicating a significant improvement within this group as well.

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Analysis of Learning Outcomes

The mean score for learning outcomes in the experimental group demonstrated a substantial and significant increase, rising from 37.65 (pre-test) to 59.00 (post-test). The t-test resulted in a calculated t-value of 9.087 (p = 0.000). Since this value is greater than the critical t-value (9.087 > 2.024) and p < 0.05, the null hypothesis was rejected. This confirms a significant difference in the average learning outcomes for the experimental group due to the SDL model.

For the control group, the mean learning outcome score increased from 25.66 (pre-test) to 37.66 (post-test). The analysis yielded a calculated t-value of 4.565 (p = .000). As this t-value is greater than the critical t-value (4.565 > 2.024), the null hypothesis was rejected. This suggests that the conventional learning model also had a significant effect on improving learning outcomes, though the magnitude of the improvement was less than that of the experimental group.

RESULTS AND DISCCUSION

The first part of this discussion addresses the effect of the Self-Directed Learning (SDL) model on student learning engagement. The SDL model was implemented in the experimental group, while the conventional model was used in the control group. A parametric statistical analysis using an independent samples t-test was conducted. The analysis, performed with SPSS 22.0, showed that the mean engagement score in the experimental group increased from 42.65 (pre-test) to 50.05 (post-test). The t-test on the questionnaire data yielded a calculated t-value (t-value) of 5.241 with a probability (p-value) of .000. This value was compared to the critical t-value (t-table) of 2.024 (for $df = 38$ at a 5% significance level). As the calculated t-value was greater than the critical t-value (5.241 > 2.024) and the significance value was less than 0.05 ($p < .05$), the null hypothesis (H_0) was rejected, and the alternative hypothesis (H_1) was accepted. This signifies a statistically significant difference in the average learning engagement of students who used the Self-Directed Learning model.

In contrast, the control group also experienced an increase in their mean engagement score, from 40.40 (pre-test) to 44.35 (post-test). The analysis for this group yielded a calculated t-value of 3.109, which was also greater than the critical t-value of 2.024 (p = .004). Although this increase was also statistically significant, the improvement was smaller than that observed in the experimental group.

These results indicate that the Self-Directed Learning model has a significant positive effect on improving student learning engagement. The SDL model fosters a more active classroom atmosphere, where students play a more prominent role in the learning process because they are given opportunities to think critically, express opinions, and discuss with their peers.

The implementation of the SDL model can serve as an effective strategy to address low student engagement. This is demonstrated by the changes in student attitudes following the intervention. Students showed an ability to progress more efficiently and were provided with a valuable opportunity to think freely during the learning process. Consequently, students

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become more aware of their own potential and can apply it to solve problems related to the subject matter.

Regarding learning outcomes, the independent samples t-test also revealed a significant difference. The mean post-test score for the experimental group (M = 8.35) was significantly higher than that of the control group (M = 6.40). The analysis yielded a calculated t-value of 4.115 (p = 0.000). Since this t-value is greater than the critical t-value of 2.024 (4.115 > 2.024) and the significance is less than 0.05, the null hypothesis (H_0) was rejected. This indicates that the Indonesian language learning outcomes of students taught with the SDL model were significantly better than those of students taught with the conventional model.

Students' learning outcomes in the Indonesian language subject serve as an indicator of their understanding and mastery of the teaching materials. The measure of success in mastering the material can be seen from the learning outcome scores. The time and opportunity provided by the SDL model allow students to achieve optimal results, which in turn impacts their academic performance. Therefore, the role of the teacher is crucial, both in facilitating learning and in selecting an effective model that can maximize the learning process and, consequently, student achievement.

CONCLUSION

This study aimed to determine the effect of self-directed learning on the learning engagement and outcomes of fourth-grade students in the Indonesian language subject at SDN 1 Mangkung. After the data was analyzed by the researcher, the following conclusions were drawn from the overall discussion: The results of the independent samples t-test on the student learning engagement questionnaire show that the mean score of the experimental group was 42.65 on the pre-test and 50.05 on the post-test. This result indicates an increase in the mean score of the experimental group. The analysis of the questionnaire showed a calculated t-value of 5.241 with a probability of 0.000. This value was compared to the t-table value of 2.024 (at a 5% significance level with 38 degrees of freedom). It can thus be concluded that the calculated t-value is greater than the t-table value (5.241 > 2.024) with a sig. (2-tailed) value of .000 < 0.05. Therefore, it is concluded that H_0 was rejected and H_1 was accepted. Given that Sig. < 0.05, H_0 is rejected and H_a is accepted, which means there is a significant difference in the average learning engagement of students using the Self-Directed Learning model in the experimental group. The results of the hypothesis testing, or the independent samples t-test, on the student learning outcomes test show that the mean score for the experimental group was 37.65 on the pre-test and 59.00 on the post-test. This result indicates that the scores of the experimental group using the SDL model were better and experienced a significant increase. The analysis of the learning outcomes test showed a calculated t-value of 9.087 with a probability of 0.000. This value was compared to the t-table value of 2.024 (at a 5% significance level with 38 degrees of freedom). It can thus be concluded that the calculated t-value is greater than the t-table value (9.087 > 2.024) with a sig. (2-tailed) value of .000 < 0.05. Given that Sig. < 0.05, H_0 is rejected and H_a is accepted,

which means there is a significant difference in the average learning outcome scores for the experimental group using the SDL model.

REFERENCE

Astuti, Y. (2019). Pengaruh keaktifan belajar dan motivasi terhadap hasil belajar siswa pada mata pelajaran ekonomi. *Jurnal Pendidikan Ekonomi dan Bisnis, 7*(1), 45–56. https://doi.org/10.21009/JPEB.007.1.5

Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). SAGE Publications.

Guglielmino, L. M., & Guglielmino, P. J. (2020). The case for promoting self-directed learning in formal educational institutions. *International Journal of Self-Directed Learning, 17*(2), 1–15.

Hartono. (2019). *Statistic untuk penelitian*. Pustaka Pelajar.

Hidayat, T., & Prastowo, R. (2021). Implementasi self-directed learning dalam konteks kurikulum merdeka belajar. *Jurnal Inovasi Pendidikan, 8*(2), 112–125.

Leuwol, F. S., Wantu, H. M., Ilham, C. I., Nduru, M. P., Susmiyati, D., Mardikawati, B., Suhendi, D., Mujab, S., Firman, M., Anaktototy, K., Nur, M. A., & Rinaldi, F. (2023). *Top 10 model pembelajaran abad 21*. Penerbit Adab.

Loeng, S. (2020). Self-directed learning: A core concept in adult education. *Education Research International, 2020*, 1–10. https://doi.org/10.1155/2020/3816132

Ningsih, D. P., Saputra, S. Y., & Suryadmaja, G. (2025). Model of religious moderation based on local wisdom in the Perang Topat Lingsar tradition, West Lombok Regency. *Jurnal Ilmiah Mandala Education, 45*(1), 177–185.

Pratama, G. S., & Sariyasa. (2021). The effect of self-directed learning model on mathematical problem-solving ability. *Journal of Physics: Conference Series, 1810*(1), 012061. https://doi.org/10.1088/1742-6596/1810/1/012061

Putri, F. E., Amelia, F., & Gusmania, Y. (2019). Hubungan gaya belajar dan aktivitas belajar matematika terhadap hasil belajar siswa. *Edumatika: Jurnal Penelitian Pendidikan Matematika, 2*(2), 83–88.

Rahman, A., Sari, D. P., & Abdullah, F. (2022). The relationship between self-directed learning readiness and academic achievement among health students. *Jurnal Keperawatan Indonesia, 25*(3), 193–200. https://doi.org/10.7454/jki.v25i3.1234

Rasyid, A. (2019). Pengaruh kompetensi guru dan self directed learning terhadap hasil belajar mata pelajaran fikih kelas VIII MTsN 17 Jakarta tahun pelajaran 2018/2019. *Geneologi PAI: Jurnal Pendidikan Agama Islam, 6*(2), 89–99.

Sardiman, A. M. (2018). *Interaksi dan motivasi belajar mengajar*. Rajawali Pers.

Saputra, H. D. (2020). Urgensi keterampilan abad 21 dan peran pendidik dalam menyiapkan generasi unggul. *Prosiding Seminar Nasional Pendidikan FKIP, 3*(1), 234–241.

Sinar. (2018). *Metode active learning*. Deepublish.

Sugiyono. (2018). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.

Suryadmaja, G. (2025a). Semiotic analysis of John Fiske: The meaning of the song "Senja Kala Itu" by Gading Suryadmaja. *Jurnal Media Semiotic, 5*(03), 325–335. https://doi.org/10.58471/jms.v5i03

Suryadmaja, G. (2025b). *Sosiologi seni: Memahami interaksi antara seni dan masyarakat*. In D. P. Ningsih (Ed.), PT Rajawali Media Utama.

Suryadmaja, G., Ardiyansyah, L. D. S., & Purwati, D. (2015). Mengoptimalkan hasil belajar mahasiswa melalui pengembangan media Rumah Cerita pada mata kuliah Tata Teknik Pentas Prodi Pendidikan Sendratasik UNU NTB. *Jurnal Ilmiah Mandala Education, 1*(2), 290–301. https://doi.org/MENGOPTIMALKAN-HASIL-BELAJAR

Wahyuningsih, E. S. (2020). *Model pembelajaran mastery learning: Upaya peningkatan keaktifan dan hasil belajar siswa*. Deepublish.

Wulandari, D., & Surjono, H. D. (2019). Analisis problematika pembelajaran pasif di sekolah menengah atas. *Jurnal Manajemen Pendidikan, 14*(2), 123–134.