



The Effect of Discovery Learning Model on the Indonesian Language Learning Outcomes at Grade IV Students of State Elementary School 124394 Pematangsiantar

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Abstract

This study aims to determine the effect of the Discovery Learning model on the Indonesian language learning outcomes of fourth-grade students at the UPTD of Public Elementary School 124394 Pematangsiantar in the 2025/2026 academic year. The study used a quantitative approach with a pretest–posttest control group design. The study subjects were 54 students, consisting of 27 students in grade IV A (experimental) and 27 students in grade IV B (control). The research instrument consisted of 10 essay questions (pretest) and 10 essay questions (posttest). These questions were tested for Aiken V, reliability, N-gain, normality, homogeneity, and hypothesis testing (t-test). The results showed a significant increase in the average pretest score of the experimental class, which was 32.41 and the control class, which was 54.63. After the treatment, the average posttest score of the experimental class increased to 91.48, while the control class's score increased to 76.41. The average N-Gain for the experimental class was 87.6404% (high category) and for the control class, 47.9874% (moderate category). The data were normally distributed and homogeneous (Sig. 0.674 > 0.05). An independent samples t-test on N-Gain showed a significance value of 0.000 (<0.05), thus concluding that the Discovery Learning model has a positive and significant effect on improving fourth-grade students' Indonesian language learning outcomes.

Keywords: Discovery Learning, learning outcomes, Indonesian language, Elementary School.





INTRODUCTION

The development of information and communication technology in the digital era has transformed the way humans acquire, process, and disseminate information. Elementary school-aged children now grow up in an environment rich in visual, interactive, and fast-paced stimuli. This situation demands that classroom learning processes are no longer one-way, but rather provide space for students to actively seek, discover, and construct their own knowledge to align with the learning characteristics of today's generation.

The Independent Curriculum is the latest curriculum policy created by the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia as a step to restore the learning process after the pandemic and to improve the existing curriculum. This policy was officially launched in 2022 and has been gradually implemented in various educational institutions as part of changes to the national education system. One of the main characteristics of the Independent Curriculum is the implementation of differentiated learning, namely learning that adapts the learning process, content, and products based on students' readiness and learning styles. The Independent Curriculum integrates the Pancasila Student Profile as a primary educational goal. The Pancasila Student Profile encompasses six dimensions: (1) faith, devotion to God Almighty, and noble character; (2) global diversity; (3) mutual cooperation; (4) independence; (5) critical thinking; and (6) creativity.

The independent curriculum in elementary schools includes several subjects designed to support student development. These subjects include Pancasila Education, Indonesian Language, Mathematics, Natural and Social Sciences (IPAS), Physical Education, Sports, and Health, Arts and Culture, and local content in accordance with educational unit policies. The Indonesian language subject aims to develop students' language skills, including listening, speaking, reading, and writing. Furthermore, Indonesian language learning also aims to improve critical thinking skills and students' understanding of various types of texts, including literary texts.

In fourth-grade Indonesian language learning in elementary schools, one of the important topics is understanding the elements of stories, both intrinsic and extrinsic. Intrinsic elements are those that build the story from within, such as theme, characters and characterization, plot, setting, point of view, and moral. Extrinsic elements, on the other hand, are those that originate from outside the story, such as the author's background, sociocultural conditions, moral values, religious values, and societal conditions that influence the story's creation.

Based on initial observations in the fourth grade of the UPTD of Pematangsiantar State



Elementary School 124394, it was found that student learning outcomes on the elements of a story were still relatively low. Many students had difficulty identifying the intrinsic and extrinsic elements of a story. This was evident in the students' daily evaluation scores, which did not meet the Learning Objective Achievement Criteria (KKTP) set by the school. This problem was caused by the learning process, which still tended to be teacher-centered. Teachers predominantly used lecture and simple question-and-answer methods, thus reducing student active involvement in the process of discovering learning concepts. As a result, students became passive, less interested in participating in the lesson, and simply memorized the material without deeply understanding the story's content. This situation contradicts the principles of the Independent Curriculum, which emphasizes active and meaningful learning.

Table 1. Learning Outcome Test Scores from Grade IV

Class	Minimum Passing Grade (KKM)	Total Students	Percentage	Description
IV A	>70	7	35%	Passed
	<70	20	65%	Not Passed
	Total	27	100%	
IV B	>70	6	30%	Passed
	<70	21	70%	Not Passed
	Total	27	100%	

(Source: UPTD SD Negeri 124394 Pematangsiantar)

Based on the data in Table 1, it is known that of the 27 students in grade IV A, only 7 (35%) were declared to have completed the test, while 20 students (65%) had not yet reached the Minimum Competency (KKM). Meanwhile, in grade IV B, with 27 students, only 6 (30%) were declared to have completed the test, and 21 students, or 70%, had not yet reached the Minimum Competency (KKM). This indicates that the majority of students still experience difficulties in identifying story elements. Learning is considered complete if at least 70% of students achieve the Minimum Competency (KKM), thus it can be concluded that the skills of identifying story elements in grade IV students are still suboptimal or still low. Based on these issues, a learning model is needed that can increase active participation and skills in identifying story elements, one of which is the Discovery Learning model.

The Discovery Learning model is a learning process that actively engages students in

discovering concepts or principles through observing, collecting data, analyzing, and drawing conclusions. With this model, students not only receive information from the teacher but also participate directly in the learning process, thus deepening and sustaining conceptual understanding (Mongisidi & Iskandar, 2023). Discovery Learning is a learning process that allows students to actively experience and discover knowledge for themselves, rather than simply receiving it from the teacher (Fadhil Al Mukarom, 2023).

This is in line with research showing that the discovery learning model is effective in increasing student activity and learning outcomes, as well as encouraging students to be more active and creative in the learning process (Dyah Aryani et al., 2025). Research findings indicate that implementing this model can improve students' understanding of Indonesian language material and make them more active and enthusiastic in learning (Jewarut & Shanti Bhuana, 2025). The Discovery Learning model has a positive impact on fifth-grade elementary school students' Indonesian language learning outcomes, significantly different from conventional methods (Apriza & Rizharidi, 2025).

RESEARCH METHODS

1. Type of Research

This research is quantitative using a quasi-experimental design. A quasi-experimental design is a form of experimental design used by researchers when it is difficult to determine a control group in a study. Since no groups are randomly selected, descriptive statistics are used (Sugiyono, 2021). The quasi-experimental design used in this study is a Two-Group Pretest-Posttest Design. A Two-Group Pretest-Posttest Design allows for more accurate results because it allows comparisons with the pre-treatment situation (Sugiyono, 2021). The following illustrates the Two-Group Pretest-Posttest design:

Table 2. One Group Design Pretest-Posttest

Pretest	Treatment	Posttest
O ₁	X ₁	O ₂
O ₃	-	O ₄

Description:

O₁ = Pretest for the experimental class on story elements

O₂ = Posttest for the experimental class on story elements

O₃ = Pretest for the control class on story elements



O4 = Posttest for the control class on story elements

X1 = Learning using the discovery learning model

In the initial stage, students were given a pretest. The researcher used the pretest to assess students' initial abilities before receiving the treatment. Before administering the Discovery Learning model, the researcher briefly explained the lesson to support the material. This study aimed to examine the effect of the Discovery Learning model on student learning outcomes in a predetermined sample.

2. Research Location and Time

This research was conducted at the UPTD of SD Negeri 124394 Pematangsiantar. This research will be conducted in the even semester of the 2026/2027 academic year, from April 16-22, 2026.

3. Population and Sample

A population is the entire object or subject that serves as a source of data in a study. A population is all data or subjects of interest within a research scope determined by the researcher. Based on this opinion, the population in this study is all fourth-grade students at the UPTD SD Negeri 124394 Pematangsiantar for the 2026/2027 academic year.

The sample in this study is all fourth-grade students at the UPTD SD Negeri 124394 Pematangsiantar, totaling 54 students, consisting of 27 students from class IV A and 27 students from class IV B. The sampling technique used was total sampling, meaning all members of the population are used as research samples. This is in accordance with the opinion that if the population size is less than 100, then the entire population can be used as a sample (Sugiyono, 2022). Class IV A was designated as the experimental class using the Discovery Learning model, while class IV B was designated as the control class using conventional learning.

4. Data Collection Techniques

Data collection techniques are the methods researchers use to obtain information relevant to the research objectives, such as through observation, interviews, and documentation, so that the data obtained can describe the phenomenon being studied in depth (Putri & Murhayati, n.d.).

The data collection techniques used in this study are:

a. Pretest



This test is the initial step taken to determine the knowledge and learning outcomes of fourth-grade students on the story elements material before using the Discovery Learning model.

b. Posttest

The posttest is the final step used to determine the learning outcomes of fourth-grade students on the story elements material after using the Discovery Learning model.

c. Documentation

Documentation is a tool used to provide a clearer picture of the learning situation. Research documentation can take the form of videos, images, newspapers, and other materials. The documentation used in this study consists of photographs taken during learning using the Discovery Learning model and the corrected pretest and posttest answers, which will be attached.

5. Data Analysis Techniques

This study employed quantitative analysis, a research approach that uses numerical data to answer research questions. This approach emphasizes objective measurement, standardized data collection, and the use of statistical analysis to test hypotheses or explain phenomena. The data analysis technique used in this study to determine the extent of improvement in student learning outcomes was the Hake factor, often referred to as the gain factor.

This method measures the effectiveness of the learning model from the initial treatment (initial ability test) to the target learning outcomes after treatment (post-test). The target must be achieved, of course, by 100% mastery of the material by students, and at least reaching the KKTP (competency competency standard). To test the effectiveness of the discovery learning model, manual calculations were used using the N-Gain effectiveness formula. The normalized gain test was conducted to determine the improvement in student learning outcomes after treatment. Calculate the normalized gain score using the following formula:

$$N - Gain = \frac{\text{Skor post test} - \text{Skor pre test}}{\text{Skor maksimal} - \text{Skor Pre test}}$$

Note:

N-gain: Average normalized gain

Post-test score: Post-test value

Pre-test score: Pre-test value

Maximum score: Ideal maximum value

RESULTS AND DISCUSSION

This study aimed to determine the effect of the Discovery Learning model on the



Indonesian language learning outcomes of fourth-grade students at the UPTD of Public Elementary School 124394 Pematangsiantar. This study used a pretest–posttest control group design involving two classes: class IV A as the experimental class and class IV B as the control class. The total sample size was 54 students: 27 in the experimental class and 27 in the control class. Prior to the study, the researchers did not pilot test the instrument in other schools but instead validated the instrument through expert validators, namely lecturers and class teachers. This validation aimed to assess the instrument's suitability in terms of content, language, and suitability to learning indicators. Based on the validation results, the instrument was declared suitable for use as pretest and posttest questions.

Before administering the treatment, both classes were given a pretest to determine students' initial abilities. Based on the pretest results, the average score for the experimental class was 32.41, while the average score for the control class was 54.63. The difference in average pretest scores between the two classes did not affect the research results because the analysis of learning improvement was calculated using N-Gain, which measures improvement based on each student's initial abilities.

Furthermore, the experimental class was treated using the Discovery Learning model, while the control class used conventional learning. After the learning process was completed, both classes were given a posttest to determine student learning outcomes. The posttest results showed that the average score for the experimental class was 91.48, while the average score for the control class was 76.41. This indicates that student learning outcomes in the experimental class were higher than those in the control class.

Based on the N-Gain Percent calculation, the average improvement in the experimental class was 87.6404%, which is categorized as high (effective), with a minimum score of 56.25% and a maximum score of 100.00%. Meanwhile, the control class had an average N-Gain of 47.9874%, which is categorized as moderate (less effective), with a minimum score of 18.60% and a maximum score of 62.50%. These data indicate that learning outcomes in the experimental class were significantly higher than those in the control class.

Based on the results of the Shapiro–Wilk normality test at a significance level of 0.05, the pretest and posttest significance values for both classes were greater than 0.05, thus concluding that the data were normally distributed. Furthermore, the results of the homogeneity test using Levene's Test showed a significance value of $0.674 > 0.05$, thus declaring the data for both classes homogeneous. To test the research hypothesis, a two-sample independent samples t-test was used on students' N-Gain scores. The t-test results showed a significance value of $0.000 < 0.05$, thus accepting the alternative hypothesis (H_a) and rejecting the null hypothesis (H_0). Therefore,





it can be concluded that the Discovery Learning model has an effect on improving the Indonesian language learning outcomes of fourth-grade students at the UPTD of SD Negeri 124394 Pematangsiantar.

The improvement in learning outcomes in the experimental class occurred because the Discovery Learning model positions students as active subjects in the learning process. Students are directly involved in discovering concepts and knowledge through exploration, observation, discussion, and discovery activities, so that the understanding gained becomes more meaningful and long-lasting.

CONCLUSION

Based on the research results and discussion, it can be concluded that the Discovery Learning model has a positive and significant effect on the Indonesian language learning outcomes of fourth-grade students at the UPTD of Public Elementary School 124394 Pematangsiantar. This is evident from the comparison of pretest and posttest results for both classes. The average pretest score for the experimental class was 32.41, while the control class was 54.63. After being treated using the Discovery Learning model in the experimental class, the average posttest score increased to 91.48, while the control class, which used conventional learning, achieved a posttest average of 76.41. The improvement in learning outcomes was also confirmed by the N-Gain analysis. The average N-Gain for the experimental class was 87.6404%, categorized as high (effective), while the control class's score was 47.9874%, categorized as medium. The prerequisite test results indicated that the data were normally distributed and homogeneous (Sig. 0.674 > 0.05). Furthermore, the results of the hypothesis test using an independent samples t-test at the N-Gain value showed a significance of 0.000 (<0.05), thus accepting the alternative hypothesis.

Thus, it can be concluded that the Discovery Learning model is significantly more effective than conventional learning in improving fourth-grade students' Indonesian language learning outcomes. This model encourages active student involvement in discovering learning concepts, thus optimally improving learning outcomes.

REFERENCES

Adelia Salsabila, Wolor, C. W., & Marsofiyati. (2023). Pengaruh gaya belajar dan cara mengajar terhadap hasil belajar siswa. *Jurnal Bintang Pendidikan Indonesia*, 2(1), 21-34. <https://doi.org/10.55606/jubpi.v2i1.2300>





- Ansari, B. I., Junaidi, J., Maulina, S., Herman, H., Kamaruddin, I., Rahman, A., & Saputra, N. (2023). Blended-Learning Training and Evaluation: A Qualitative Study. *Journal of Intercultural Communication*, 23(4), 155–164. <https://doi.org/10.36923/jicc.v23i4.201>
- Br. Sinuhaji, J. P., & Purba, A. (2024). Analisis unsur intrinsik dan ekstrinsik pada novel Imperfect karya Meira Anastasia. *Jurnal Komunitas Bahasa*, 12(1), 12–19. <https://doi.org/10.36294/jkb.v12i1.3542>
- Budiyanti, K., Zaim, M., & Thahar, H. E. (2023). Teori-teori pendidikan dan pengaruhnya terhadap pembelajaran bahasa abad ke-21. *Journal of Education Research*, 4(4).
- Connie, C., Risdianto, E., Haryanto, H., Maryani, H., Putra, W., Saputra, N., & Herman, H. (2024). Implementation of a Collaborative Online Learning Model for Standardizing Adaptive PBM Class in Postgraduate MAP UNIB. *EVOLUTIONARY STUDIES IN IMAGINATIVE CULTURE*, 1996–2003. <https://doi.org/10.70082/esiculture.vi.2172>
- Danuarta, M., Rai, I. B., & Wirani, I. A. S. (2025). Unsur intrinsik dan nilai pendidikan karakter pada kumpulan cerpen Luh Jalir karya Mas Ruscita Dewi. *Jurnal Pendidikan Bahasa Bali Undiksha*, 11(2), 128–137. <https://doi.org/10.23887/jpbb.v11i2.76644>
- Dos Santos, M., Hidayah, N., Kediri, I. N. H., & Palembang, S. S. K. (2025). Content validity of the mathematics learning independence instrument for junior high school students using Aiken's V. *Mathematics Research and Education Journal*, 9(2), 1–14.
- Dyah Aryani, W., Saadah, N. S., Anggraeni, R., Alamri, S. M., Setiawan, R., & Ihsan, M. N. (n.d.). Penerapan model pembelajaran discovery learning pada peserta didik di SD Negeri Ciawigede. <https://doi.org/10.59818/jpi.v5i4.1742>
- Erliani, N., Ernawati, Y., & Yanti, C. H. (n.d.). Menulis dan menceritakan kembali cerita rakyat di Tanjung Lago Banyuasin sebagai upaya pengenalan dan pelestarian budaya lokal. <https://jurnalpengabdianmasyarakatbangsa.com/index.php/jpmba/index>
- Fadhil Al Mukarom, R. (n.d.-b). Pengaruh model discovery learning terhadap kemampuan metakognisi peserta didik kelas III SDN 1 Glagahwangi tahun ajaran 2022/2023.
- Faizah, H., & Kamal, R. (2024). Belajar dan pembelajaran. *Jurnal Basicedu*, 8(1), 466–476. <https://doi.org/10.31004/basicedu.v8i1.6735>
- Jatmiko, H. T. P., & Setiawan, F. (2022). Tema, fungsi, dan nilai dalam cerita rakyat “Asal Usul Desa Selakambang.” *Jurnal Guru Indonesia*, 2(1), 40–47. <https://doi.org/10.51817/jgi.v2i1.245>
- Khasanah, U., Herman, H., Pratama, H. C., & Darodjat, D. (2024). PEMBELAJARAN TEMATIK: KONSEP, APLIKASI DAN PENILAIAN. Surakarta: Penerbit Tahta Media. Retrieved from <https://tahtamedia.co.id/index.php/issj/article/view/785>





- Lestari, W. D., Yuniawatika, Y., & Rahmawati, H. (2024). Pengembangan model pembelajaran berbasis literasi digital untuk meningkatkan hasil belajar siswa sekolah dasar. *Journal of Language Literature and Arts*, 4(11), 1103–1109. <https://doi.org/10.17977/um064v4i112024p1103-1109>
- Mangera, E., Baan, A., Simega, B., Dewi, R., Tanduk, R., Palimbong, D. R., & Mangera, M. (n.d.). Mengenal kehidupan masyarakat melalui cerita rakyat Toraja. <https://doi.org/10.29240/estetik.v7i2.11227>
- Purba, N., Sipayung, R. W., Rahmawati, R., Siagian, B. A., Herman, H., Saragi, C. N., and Fatmawati, E. (2024). An Implementation of Project-Based Learning (PBL) Teaching Model in Improving Early Child's Critical Thinking Skill. *Library Progress International*, 44(3), 90-96. <https://bpasjournals.com/library-science/index.php/journal/article/view/313>
- Sekarsari, D. F. P., & Wicaksono, A. G. (2023). Analisis model pembelajaran discovery learning pada pembelajaran matematika sekolah dasar. *Journal of Educational Learning and Innovation*, 3(1), 213. <https://doi.org/10.46229/elia.v3i1>
- Silalahi, D. P. (2024). Pengaruh metode pembelajaran discovery learning dalam meningkatkan hasil belajar mahasiswa pada materi reading comprehension. *Jurnal Nuansa Akademik*, 9(2), 511–522.
- Syafwan, M. K. R., Afnuhazi, R., Negeri Padang, U., & Studi Keperawatan, P. (2024). Faktor-faktor yang mempengaruhi hasil belajar kelas VI SDN 20 Indarung Padang. *Jurnal Kesehatan Saintika Meditory*. <https://jurnal.syedzasaintika.ac.id>
- Rohmat, B. (n.d.). Peningkatan hasil belajar dalam memahami hak, kewajiban dan tanggung jawab sebagai warga negara melalui metode SAVI pada siswa kelas VI SDN Muneng Leres I Kecamatan Sumberasih Kabupaten Probolinggo tahun pelajaran 2022/2023.
- Saragih, N., Sherly, S., & Herman, H. (2024). Konsep Analisis SWOT dalam Meningkatkan Kualitas Pelayanan dan Kepuasan Orangtua Lembaga TK Swasta RK Bintang Timur Pamatang Raya. *Attractive : Innovative Education Journal*, 6(2), 29–35. <https://doi.org/10.51278/aj.v6i2.1094>
- Sinaga, M., Sherly, S., & Herman, H. (2024). Pengaruh Gaya Kepemimpinan Altruistik dan Supervisi Kelas untuk Meningkatkan Kepuasan Kerja Guru di SD Wilayah Siantar Naungan YPK ST. Yoseph Pematangsiantar. *Bulletin of Community Engagement*, 4(2), 1–7. <https://doi.org/10.51278/bce.v4i2.1089>
- Sugiyono. (2021). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.





- Suryani, N., Jailani, M., Suriani, N., Jambi, R. M., & Jambi, U. S. T. S. (n.d.). Konsep populasi dan sampling serta pemilihan partisipan ditinjau dari penelitian ilmiah pendidikan. <http://ejournal.yayasanpendidikandzurriyatulquran.id/index.php/ihsan>
- Zahfa, F., Fauzi, A., Yansyah, E. A., Fadhillah, F., Syahdilla, J., & Binjai, I. S. A. H. H. (2025). Validity and reliability of educational evaluation tests. *Jurnal Riset Ilmu Pendidikan*, 5(1), 1–5. <https://doi.org/10.30596/jcositte.v1i1.xxxx>

