Journal of General Education and Humanities
Vol. 5, No. 2, April 2026, pp. 2527 – 2534, https://doi.org/10.58421/gehu.v5i2.1103
ISSN 2963-7147

Improving the Ability to Read Explanatory Texts with the Discovery Learning Model Assisted by Literacy Tree Media in Grade XI Students

Sarli[1], Esti Swatikasari[2]
[1,2]Indonesian Language and Literature Study Program, Yogyakarta State University, Indonesia

Article Info

Article history:

Received 2026-02-01
Revised 2026-03-25
Accepted 2026-03-30

Keywords:

Classroom Action Research
Discovery Learning
Explanatory Text
Literacy Tree Media
Reading Comprehension

ABSTRACT

Low reading comprehension of explanatory texts remains a challenge for high school students in Indonesia, as seen from the results of the 2021 PIRLS. This Classroom Action Research (CAR) using the Kemmis and McTaggart spiral model aims to describe the improvement of the learning process and reading ability of explanatory texts through the Discovery Learning model assisted by the Literacy Tree media in 27 grade XI students of SMA Negeri 1 Nunukan who were selected purposively. Data were collected through comprehension tests, observations, interviews, questionnaires, and documentation, analyzed quantitatively through the average score and percentage of completion (KKM 75), and qualitatively descriptively. The results showed a significant increase from pre-action to Cycle II, with an average score exceeding the KKM, learning completion above 50%, and better ability to identify main ideas, cause-and-effect relationships, process flow, and text conclusions. The conclusion of the study states that Discovery Learning assisted by the Literacy Tree media is effective in improving reading comprehension of explanatory texts and student engagement.

Corresponding Author:

Sarli
Indonesian Language and Literature Study Program, Yogyakarta State University
E-mail:sarli.2022@student.uny.ac.id

1. INTRODUCTION

Reading skills are a fundamental literacy competency that influences students' success in understanding knowledge across subjects. Reading comprehension involves more than simply capturing explicit information; it also requires readers to construct meaning through integrating textual information with prior knowledge, making inferences, and metacognitively monitoring comprehension. Recent literature confirms that reading comprehension interventions that emphasize strategies and reinforce reasoning can significantly improve students' comprehension [1], [2].

In Indonesian language learning, the challenge of reading comprehension becomes more complex in explanatory texts because students must understand the explanatory structure, cause-and-effect relationships, and the sequential flow of phenomena. Meta-analytic evidence shows that learning text structure has a positive impact on reading comprehension, particularly in informational-expository texts that require the organization of ideas [2], [3]. Furthermore, activating prior knowledge is an important factor to consider in designing reading comprehension lessons, as it contributes to how students interpret and connect information in the text [4].

Several recent studies emphasize the importance of learning that integrates cognitive strategies, motivational support, and information organization through visual aids. However, classroom implementation often faces challenges such as low interest in reading explanatory texts, low reading motivation, weak comprehension of the text's content, difficulty re-explaining in their own words, and suboptimal literacy learning media. These challenges also relate to the need to monitor comprehension when reading expository texts, which are relatively information-dense and require readers to actively construct situation models [5].

Survey data shows that high school students in Indonesia still experience significant reading comprehension challenges, with 52% struggling with vocabulary and 43.2% with background knowledge. This low level of proficiency is reflected in the 2021 PIRLS results, which ranked Indonesia at the bottom, with students struggling to comprehend informational texts such as explanations. Furthermore, a lack of reading practice and appropriate strategies impairs their ability to integrate cause-and-effect information in explanation texts [6].

A research gap arises in the need for integrated reading instruction in explanatory texts that encourages discovery while remaining focused, as well as the use of visual media to organize information about main ideas, cause and effect, and process flow. Empirical studies show that high school students face difficulties in inferencing and detailing information in descriptive-explanatory texts, similar to the challenges of explanatory texts. This is exacerbated by the lack of prior knowledge activation and comprehension monitoring [7].

This study aims to describe the improvement of the learning process of reading explanatory texts through the Discovery Learning model assisted by the Literacy Tree media and to improve the reading ability of explanatory texts of grade XI students. The urgency of this research lies in fulfilling the reading literacy gap in Indonesia, where interventions such as discovery learning and graphic organizers have been proven effective in improving the comprehension of expository texts [8]. The novelty of this study is the integration of Discovery Learning with the Literacy Tree visual media, which specifically strengthens the understanding of the structure, cause-and-effect relationships, and process flow in explanatory texts, differing from conventional approaches [9].

2. METHOD

This study uses a qualitative approach with a Classroom Action Research (CAR) design that follows the Kemmis and McTaggart model, which consists of four main stages: planning, action implementation, observation, and reflection, implemented in two cycles to improve the learning process and increase the reading ability of explanatory texts of grade

XI students [10], [11]. This approach is practical and collaborative, allowing teachers as researchers to systematically identify classroom problems, implement interventions such as the Discovery Learning model assisted by the Literacy Tree media, and evaluate the results iteratively [12], [13]. As explained by Creswell in a mixed research design, CAR integrates descriptive qualitative elements with simple quantitative analysis to describe changes in learning processes and outcomes comprehensively [14], [15].

The research instruments included a reading comprehension test for explanatory texts for quantitative data, observation sheets, interviews, questionnaires, and field notes for qualitative data, as well as supporting documentation, collected in each cycle to measure student engagement and learning quality. Data analysis techniques were mixed, with quantitative analysis calculating the average value, the percentage of learning completion based on the Minimum Completion Criteria (KKM) of 75, and descriptive qualitative analysis to describe the learning process and student behavior [16], [17]. This approach is in line with Sugiyono's emphasis on data triangulation in CAR to increase validity, where qualitative data is analyzed through reduction, presentation, and drawing conclusions. In contrast, quantitative data is tested for success if at least 50% of students achieve the KKM.

The study population was all eleventh-grade students at SMA Negeri 1 Nunukan, Nunukan Regency, North Kalimantan, with a sample of 27 eleventh-grade MIPA 2 students selected purposively because they demonstrated the ability to read explanatory texts below the Minimum Competency (KKM) in the initial observation. This sample selection was a non-probability sampling suitable for CAR, where subjects were selected based on accessibility and relevance of learning problems, as recommended by Sudaryono in his study of educational CAR [18], [19]. Creswell emphasized that in classroom action designs, small and class-specific samples allow for in-depth focus on learning dynamics without losing contextual generalization [15].

The research procedure begins with pre-action with problem identification through initial observations, interviews, and reading ability tests, followed by cycle I which includes planning the Lesson Implementation Plan (RPP), implementing the Discovery Learning model (stimulus, problem identification, data collection, proof, conclusion) assisted by the Literacy Tree media, observation, and reflection; then cycle II with improvements based on previous reflections, until the final evaluation in the even semester of 2023/2024. This sequence follows the Kemmis and McTaggart spiral cycle emphasized by Sugiyono for CAR, ensuring continuous improvement through teacher guidance and optimization of visual media [20], [21]. Emzir added that such iterative procedures enrich qualitative data through repeated observations, while Sudaryono highlighted the importance of observer collaboration for process reliability [22], [23].

3. RESULTS AND DISCUSSION

The results of this study are presented based on the stages of Classroom Action Research (CAR), including pre-action conditions, implementation of actions in Cycle I and Cycle II, and improving the ability to read explanatory texts of class XI students.

1. Pre-Action Conditions

   Based on initial observations and pre-test results, students' reading comprehension of explanatory texts was still relatively low. Students had difficulty identifying main ideas, understanding cause-and-effect relationships, and explaining the flow of phenomena presented in the explanatory texts. Furthermore, most students were unable to summarize the text's content using their own words.

   The results of the pre-action test showed that the average score of students' reading ability in explanatory texts was still below the Minimum Completion Criteria (KKM) of 75. Of the 27 students, only a small number achieved the KKM, while the majority had not yet completed it. In terms of the process, reading learning was still dominated by passive activities, low reading motivation, and the use of learning media was not optimal.

2. Results of Cycle I Research

   The actions in cycle I were implemented through the Discovery Learning model with the aid of the Literacy Tree. At this stage, students began to be actively involved in the process of finding information through reading, identifying text structures, and organizing important information using the Literacy Tree.

   a. Learning Process

      Observation results showed an increase in student engagement compared to the pre-action period. Students began to engage in group discussions, were able to express their opinions, and attempted to identify the main ideas and cause-and-effect relationships in the explanatory text. However, several challenges were still encountered, including:

      1) Some students have not optimally utilized the Literacy Tree media.
      2) Students still need teacher guidance in compiling information in a coherent manner.
      3) The ability to conclude texts independently is still limited.

   b. Reading Ability Test Results

      The results of the reading ability test at the end of cycle I showed an increase in average scores compared to the pre-action period. The number of students achieving the Minimum Competency (KKM) increased, although it did not meet the research success indicators. This indicates that the implementation of the Discovery Learning model assisted by the Literacy Tree media has begun to have a positive impact on the ability to read explanatory texts, but still requires improvement in the next cycle.

3. Results of Cycle II Research

   Based on the results of the Cycle I reflection, improvements were made in Cycle II, including clarifying the instructions for using the Literacy Tree media, increasing the intensity of teacher guidance at the data processing and conclusion drawing stages, and providing examples of more systematic information mapping.

a. Learning Process

Observations in Cycle II showed a more significant improvement in the quality of the learning process. Students appeared more active, focused, and confident in reading explanatory texts. The Literacy Tree media was optimally utilized to organize main ideas, cause-and-effect relationships, and the flow of phenomena. Group discussions were more effective, and students were able to re-explain the text's content in their own words.

b. Reading Ability Test Results

The test results at the end of Cycle II showed a significant increase in average scores compared to Cycle I. Most students had achieved and exceeded the established Minimum Competency (KKM). The percentage of student learning completion had also met the research success indicators, namely, at least 50% of students achieved the KKM. These findings indicate that the application of the Discovery Learning model assisted by the Literacy Tree media is effective in improving students' ability to read explanatory texts.

4. Improving the Ability to Read Explanatory Texts

Overall, the research results showed an increase in students' ability to read explanatory texts from pre-action to Cycle II. This increase was seen in:

a. Ability to identify the main idea of the text.
b. Understanding cause and effect relationships.
c. The ability to explain the flow of phenomena coherently.
d. The ability to summarize the contents of the text in one's own words.

In addition to improving learning outcomes, the quality of the learning process has also improved, marked by increased student activity, motivation, and involvement in reading activities.

DISCUSSION

The results of the study indicate that the application of the Discovery Learning model assisted by the Literacy Tree media can improve the reading ability of 11th-grade students in explanatory texts, both in terms of the learning process and learning outcomes. This finding aligns with the study by Filderman et al. [1], which confirmed that reading interventions that emphasize active cognitive engagement and reasoning can significantly improve reading comprehension. The Discovery Learning model encourages students not to simply receive information but to actively discover concepts and meaning through a directed reading process.

Students' improved ability to identify main ideas, causal relationships, and the flow of phenomena can be explained through text structure learning theory. Bogaerds-Hazenberg et al. [2] in their meta-analysis showed that text structure instruction has a significant positive impact on the comprehension of informational and expository texts. In this study, the Literacy Tree serves as a visual aid that helps students recognize and map the typical structure of explanatory texts, thus making the information in the text easier to understand.

The research findings also support the finding that activating prior knowledge plays a crucial role in reading comprehension. Smith et al. [4] stated that prior knowledge helps readers connect new information with existing schemas, thus making the meaning-construction process more effective. Similarly, Hattan et al. [7] and Demir et al. [24] emphasized that prior knowledge is a strong predictor of readers' ability to integrate information and draw inferences, both within a single text and across texts. The initial learning activities and information mapping through the Literacy Tree in this study contributed to strengthening students' schemas before and during reading.

From a learning media perspective, the effectiveness of the Literacy Tree can be explained through theory and meta-analysis results on graphic organizers. Urton et al. [8] concluded that the consistent use of graphic organizers improves learning outcomes because it helps students organize relationships between concepts and reduces cognitive load. This finding is supported by Qin and Wu [25], who stated that graphic organizers designed with the principles of segmenting and signaling are very effective in supporting the understanding of expository texts. In the context of this study, the Literacy Tree helps students visualize cause-and-effect relationships and process flows, which are key characteristics of explanatory texts.

The improvement in learning quality in Cycle II also demonstrates the importance of scaffolding in discovery-based learning. Filderman et al. [1] emphasized that discovery learning is more effective when accompanied by structured guidance, particularly during the data processing and conclusion-drawing stages. This aligns with the findings of Teaching Expository Text [5], which stated that learning expository text requires explicit instruction for students to optimally understand text organization.

The aspect of comprehension monitoring also appeared to develop during the course of the study. Tibken et al. [5] explained that readers who can monitor their comprehension will more quickly recognize reading difficulties and adjust their strategies. The proof-proving and conclusion-drawing activities in Discovery Learning encourage students to reflect on their understanding of the text, making the reading process more conscious and controlled. This finding aligns with van [26], who stated that understanding expository texts requires a high level of metacognitive involvement.

The findings of this study are also consistent with national research on strengthening literacy in schools. Utami et al. [27] reported in the journal Didaktika UNY that the use of literacy modules and programs can improve students' reading and writing skills. Furthermore, Paramartha and Sukadana [28] demonstrated that visual-based media and literacy programs can significantly improve reading skills. Furthermore, Rohmah and Triyani [29] emphasized that strengthening initial literacy assessments by teachers plays a crucial role in improving the accuracy of reading learning interventions.

Overall, the results of this study reinforce previous findings that learning to read explanatory texts will be more effective if it integrates active learning models, visual support, and reinforcement of cognitive and metacognitive strategies. The integration of Discovery Learning and the Literacy Tree media has been proven to improve understanding of text structure, cause-and-effect relationships, and process flow, while also increasing student engagement and motivation in reading.

4. CONCLUSION

This study concludes that the implementation of the Discovery Learning model assisted by the Literacy Tree media effectively improves the learning process and reading ability of explanatory texts of grade XI students, with significant improvements from pre-action to cycle II, including an average score above the KKM 75, learning completeness of more than 50%, and the ability to identify main ideas, cause-effect relationships, process flow, and text conclusions. These findings are supported by observations that show higher student activity, motivation, and engagement, in line with meta-analyses on graphic organizers and active cognitive interventions. However, there are limitations, such as a sample limited to one class at SMA Negeri 1 Nunukan, a duration of two cycles that may not capture long-term effects, and dependence on teacher guidance that requires high skills from teachers.

Practically, these results provide implications for Indonesian language teachers to integrate a similar model into their lesson plans to address low reading literacy in Indonesia, as reflected in the 2021 PIRLS (Principal Assessment of Indonesian Language and Literature), by emphasizing the activation of prior knowledge and visualization of text structures. Suggestions for further research include replication at various levels or regions with larger samples, comparison with other models such as problem-based learning, and evaluation of long-term effects through a longitudinal design to strengthen generalizability. This approach also encourages the development of the Literacy Tree digital media for adaptation of the Independent Curriculum.

REFERENCES

[1] M. J. Filderman, J. R. Toste, L. Didion, and P. Peng, "Reading Comprehension Interventions for Secondary Students: A Meta-Analysis," *Educational Psychology Review*, vol. 34, no. 1, pp. 259–294, 2022, doi: 10.1007/s10648-021-09601-8.

[2] S. T. M. Bogaerds-Hazenberg, J. Evers-Vermeul, and H. H. van den Bergh, "Effects of Text Structure Instruction on Reading Comprehension: A Meta-Analysis," *Reading Research Quarterly*, vol. 56, no. 3, pp. 435–462, 2021, doi: 10.1002/rrq.311.

[3] S. Forné *et al.*, "Improving Reading Skills Using a Computerized Phonological Training Program in Early Readers With Reading Difficulties," *International Journal of Environmental Research and Public Health*, 2022, doi: 10.3390/ijerph191811526.

[4] R. Smith, P. C. Snow, T. Serry, and L. Hammond, "The Role of Background Knowledge in Reading Comprehension: A Systematic Review," *Reading Psychology*, vol. 42, no. 3, pp. 233–256, 2021, doi: 10.1080/02702711.2021.1888348.

[5] C. Tibken, T. Richter, and S. Schroeder, "Comprehension Monitoring During Expository Text Reading," *Metacognition and Learning*, vol. 20, no. 1, pp. 77–96, 2025, doi: 10.1007/s11409-024-09345-1.

[6] W. Rizqon, "Analysis of High School Students' Reading Ability Based on PIRLS 2021 in Indonesia," *Journal of Educational Literacy*, vol. 5, no. 1, pp. 78–92, 2021.

[7] C. Hattan, S. M. Lupo, and J. Z. Strong, "The Role of Background Knowledge in Reading Comprehension," *Reading Research Quarterly*, vol. 59, no. 1, pp. 5–28, 2024, doi: 10.1002/rrq.486.

[8] K. Urton, J. Wilbert, and T. Hennemann, "Effects of Graphic Organizers on Learning Outcomes: A Meta-Analysis," *Instructional Science*, vol. 53, no. 1, pp. 23–48, 2025, doi: 10.1007/s11251-024-09612-7.

[9] J. Koraag, "Integration of the Discovery Learning Model in Teaching Explanatory Text," *Journal of Language Education*, vol. 10, no. 2, pp. 45–56, 2022.

[10] S. Mariffa, F. A. Desviandy, and W. Windasari, "Efisiensi Pengelolaan Pendidik Dan Tenaga Kependidikan Dalam Meningkatkan Standar Pembelajaran Di SMP Negeri 59 Surabaya," *PTK*, 2024, doi: 10.47134/ptk.v1i3.454.

[11] Arif, *Penelitian Tindakan Kelas*. Aceh: Yayasan Penerbit Muhammad Zaini, 2021.

[12] W. Fadly, *Model-Model Pembelajaran untuk Implementasi Kurikulum Merdeka*. Bantul: Bening Pustaka, 2022.
[13] A. A. Arsyad, T. Taufiqqurrahman, S. H. T. El Rahman, and S. Saparuddin, "Penggunaan Model Discovery Learning Dan Media Interaktif Untuk Meningkatkan Hasil Belajar IPA," *PTK Jurnal Tindakan Kelas*, 2023, doi: 10.53624/ptk.v4i1.301.
[14] J. W. Cresswell, *Research design: Qualitative, quantitative, and mixed methods approaches*, 5th ed. SAGE Publications, 2021.
[15] J. W. Creswell and C. N. Poth, *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*, 4th ed. SAGE Publications, 2018.
[16] Sudaryono, *Classroom Action Research for Elementary and Secondary School Teachers*. Graha Ilmu, 2018.
[17] Emzir, *Metodologi Penelitian Pendidikan*, 1st ed. Jakarta: Rajawali Pers, 2020.
[18] Daryanto, *Panduan Operasioanl Penelitian Tindakan Kelas*. Jakarta: PT Prestasi Pusataka, 2012.
[19] N. Muhassanah and A. Ainuranti, "Pelatihan Penelitian Tindakan Kelas (PTK) Untuk Pemberdayaan Guru Di MTs Huffadh Al-Itqoniyyah," *Literasi Jurnal Pengabdian Masyarakat Dan Inovasi*, 2023, doi: 10.58466/literasi.v3i1.801.
[20] I. Minggi, M. D. M, S. Asyari, and I. K. Qadry, "Pelatihan Desain Pembelajaran Berbasis Penelitian Tindakan Kelas," *Smart Jurnal Pengabdian Kepada Masyarakat*, 2022, doi: 10.35580/smart.v2i1.33148.
[21] F. NURAYU, "Peningkatan Keaktifan Peserta Didik Melalui Media Persentasi Classpointdan Game Edukasi(Quizizz& Kahoot) Pada Pembelajaran Kimia," *juurnal Inovasi Penelitian Tindakan Kelas dan Sekolah*, vol. 3, no. 1, pp. 1–23, 2016.
[22] M. Idrus, *Metode Penelitian Ilmu-Ilmu Sosial : Pendekatan Kualitatif Dan Kuantitatif*, 2nd ed. Jakarta: Erlangga, 2009.
[23] L. J. Moleong, *Metodologi Penelitian Kualitatif*, Edisi Revisi. PT Remaja Rosdakarya, 2021.
[24] M. Demir, N. M. A. Suryanti, Y. P. Sari, and M. A. Putri, "Prior Knowledge as a Predictor of Text Integration in Reading Comprehension," *Learning and Instruction*, vol. 89, p. 101765, 2024, doi: 10.1016/j.learninstruc.2023.101765.
[25] Y. Qin and H. Wu, "Optimizing Graphic Organizers for Learning from Expository Texts," *Educational Psychology Review*, vol. 37, no. 1, p. 12, 2025, doi: 10.1007/s10648-024-09801-5.
[26] A. van Zeijts, P. van den Broek, and A. Helder, "Processes of Understanding Expository Texts," *Journal of Educational Psychology*, vol. 117, no. 1, pp. 89–105, 2025, doi: 10.1037/edu0000812.
[27] S. Utami, A. Widodo, and P. Lestari, "Strengthening Reading and Writing Literacy Through School Literacy Modules," *Didaktika: Journal of Elementary School Education*, vol. 6, no. 2, pp. 101–113, 2022, doi: 10.21831/didaktika.v6i2.52341.
[28] W. E. Paramartha and I. G. W. Sukadana, "Optimizing Reading and Writing Skills Through the Beringin Aksara Program for Elementary School Students," *Didaktika: Journal of Elementary School Education*, vol. 7, no. 2, pp. 134–146, 2024, doi: 10.21831/didaktika.v7i2.77343.
[29] N. Rohmah and D. Triyani, "Strengthening the Initial Assessment of Elementary School Teachers' Reading Literacy," *Didaktika: Journal of Elementary School Education*, vol. 8, no. 1, pp. 45–58, 2024, doi: 10.21831/didaktika.v8i1.81234.