



# Deep Review of Impact Learning Model Discovery Learning in Elementary School

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Article Info	Abstract
<p><b>Article history:</b> Received: 2026-04-21 Revised: 2026-04-29 Accepted: 2026-05-01</p> <p><b>Keywords:</b> Discovery Learning, 21st Century Skills, Elementary School.</p> <p>This is an open-access article under the CC BY-SA license. Copyright © 2026 by Author. Published by Yayasan Mujtahidin Sajimah Selong (Musa Foundation), Indonesia.</p>	<p>This study aims to analyze the impact of the discovery learning model on elementary school students through a Systematic Literature Review (SLR) approach. The background of this research is based on the demands of 21st-century education, which emphasizes meaningful learning (deep learning), as well as the persistence of monotonous teaching practices that do not actively engage students. The research method employed SLR using the PRISMA protocol, which includes identification, selection, and eligibility stages of scientific articles obtained through Publish or Perish and Google Scholar within the 2021–2026 period. From an initial 500 data sources, 9 articles met the inclusion criteria and were analyzed in depth. The results indicate that the discovery learning model has a significant positive impact on improving learning outcomes, critical thinking skills, student motivation, engagement, and higher-order thinking skills. In addition, this model supports the development of 21st-century skills (6C) and science process skills through active, student-centered learning. Therefore, discovery learning can be considered an effective instructional model in creating meaningful, interactive, and contextual learning in elementary schools.</p>

## INTRODUCTION

In the current era, education has undergone a significant learning transformation both in terms of philosophical approaches that emphasize more on student involvement, increasingly sophisticated teaching media, and learning strategies and models that emphasize the accommodation of advanced cognitive abilities (Nurdiana, 2025). This massive educational transformation is influenced by the development factors of the times where humans must be adaptive to changes in existing problems that may have never been expected before. So in this era, forms of education or work that rely only on repetitive memorization will be left behind by forms of education or work that rely on problem-solving skills, deep understanding, and other advanced cognitive abilities (Zaidan, 2026).



However, unlike the ideals of education that should be, learning in many Indonesian elementary schools is still dominated by monotonous learning of lectures and only relying on memorization whose results only last in the short term and of course this can be degrade high-level thinking skills such as critical thinking skills and deep scientific understanding if applied continuously (Ni Putu Manik Candra Dewi et al., 2025; Putri et al., 2024). This shows the urgency that changes must be made related to the learning process that emphasize deep understanding and can improve the ability to think well.

One of the solutions in answering this urgency is to overhaul the monotonous learning model of lectures to a discovery learning model. The discovery learning model is one of the constructive learning models where students can find and build conceptual understanding independently with the help of their learning environment (Sayangan, 2022). This learning model is in line with the concept of deep learning where deep understanding is not achieved through skimming memorization, but is achieved through the development and appreciation of science through the active involvement of students in the learning process (Irawan, 2025).

The research related to the real impact of the discovery learning model at the elementary school education level has been carried out and the results obtained are that this learning model has been proven to be effective in improving the quality of learning (Maharani et al., 2025). However, empirical studies on the focus of this learning model tend to tie to only one impact variable, either with critical thinking skills, learning outcomes, or even locked in one subject matter. This is a research gap where discussions related to the impact of the discovery learning model on elementary school students have not been fully synthesized and analyzed as a whole, so this study was made to fill the gap with a literature review method, Systematic Literature Review, to map what impacts are experienced by elementary school students.

## METHODOLOGY

In order to map more comprehensive knowledge related to the impact of the Discovery Learning learning model in elementary schools, the methodology used in this study is Systematic Literature Review, a research method based on literature studies to collect and evaluate studies related to relevant topics (Hidayat et al., 2023).

As a systematic literature review study, SLR has a clear and transparent protocol for data sources to ensure quality and relevance to the research topic. The SLR protocol used in this study is called PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) which has 3 stages of data source testing, namely: Identification, Selection, and Feasibility Test (Zaidan, 2026).

### Identification

The practice of the identification process in this study is to search for data sources through the Publish or Perish software with the integration of Google Scholar data sources to find research articles that are relevant to the research topic by applying several search strategies such as data sources that have been published in the last 5 years (2021-2026), in Indonesian or English, and are empirical research articles that can be accessed completely and for free. By applying such a search strategy to Publish or Perish and also limiting the maximum number of searches for data sources to 500, the data sources obtained at this stage of identification reach the maximum limit that has been determined, namely 500 data sources.

### Selection

After obtaining a number of data sources from the identification process through Publish or Perish, a strict selection process is carried out to ensure the relevance of the data source to the research topic. The researchers downloaded 500 data sources in RIS format which were then processed through



software called Covidence, a software that can help the data selection process in Systematic Reviews research. Shortly after the data is entered into the software, it is automatically identified that duplicates between data sources are found amounting to 2 out of a total of 500, leaving a total of 498 data sources.

As for the selection process, which is part of the PRISMA protocol, it is integrated with the data source elimination system from Covidence, so that the selection system carried out on the data source collection is based on the relevance of the title and abstract to the research topic at the Title and Abstract stage in this software. The final result at this stage is that as many as 343 data sources were excluded for the following reasons:

1. The data source does not discuss the discovery learning model.
2. The data source does not focus on the elementary school level.
3. The source of the data is not empirical research.

### *Eligibility*

After conducting the selection process, then a total of 155 data sources were carried out a feasibility test process with the Full-Text Review stage in Covidence, a stage where the researcher is required to read the entire content of the data source text to ensure the accuracy of the research topic is also of high quality, where relevant and quality data sources will be included in the category of inclusion data sources while data sources that are otherwise included in the exclusion category. Before starting this feasibility stage process, the researcher designed a standard inclusion criterion, namely the data source must be a research article that discusses empirically relevant topics in the presentation of Indonesian or English published in the last 5 years (2021-2026). This standard demonstrates a rigorous process by researchers to ensure all data sources are relevant and quality to the topic of impact of the Discovery Learning model for elementary school learners. At this stage, 146 data sources ended up being excluded from the total 155 that existed, leaving 9 data sources in the form of articles relevant to the research topic. The transparency of the selection process can be seen through the PRISMA table below:

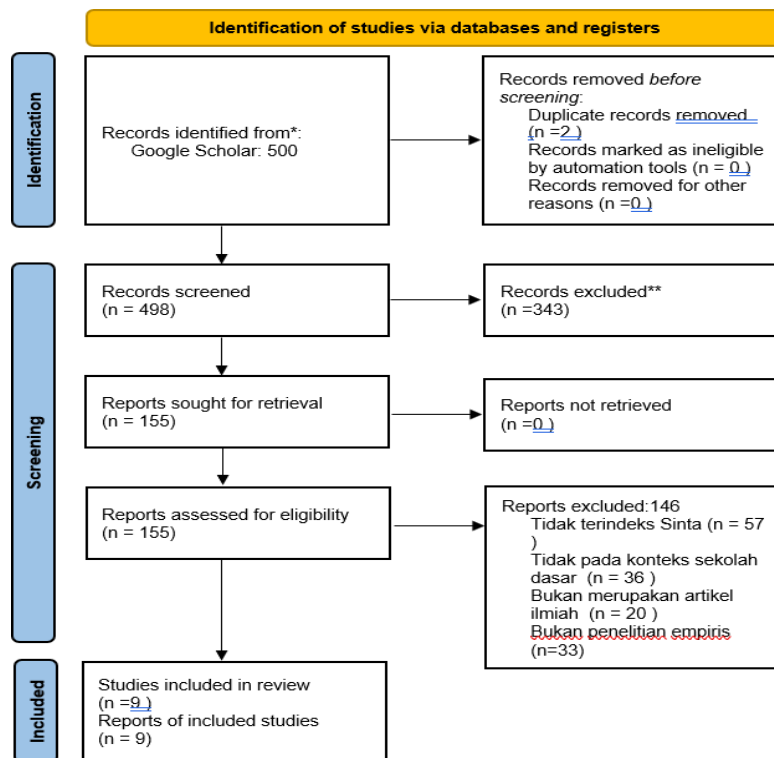


Figure 1. Diagram PRISMA

## RESULTS AND DISCUSSION

### Results

After obtaining 9 data sources in the form of articles relevant to the research topic, then a synthesis of these articles was carried out to find the impact of the discovery learning model for elementary school students comprehensively, the details are as follows:

**Table 1.** Selected Article Synthesis Table

Research Articles	Relevance to the topic
The Influence of the Discovery Learning Model Based on the Inspiring Suite on the Critical Thinking Ability of School Students Basic (Nurul Hikmah et al. 2023)	The real impact of the discovery learning model for elementary school students is the increase in critical thinking skills, student learning engagement and enthusiasm, and students' cognitive learning outcomes. This interpretation is based on the results of quantitative data research.



<p>The Influence of the Discovery Learning Model on Students' Critical Thinking Skills (Nurul Amalia et al. 2025)</p>	<p>Through being active in an in-depth understanding of the discovery learning model, students can improve critical thinking skills, increase learning enthusiasm, ability to analyze, evaluate, and be creative, ability to draw conclusions about phenomena, and various other positive impacts from a cognitive and social perspective. These impacts are measured through tests, observations, and live interviews with the students.</p>
<p>Application of the Discovery Learning Model in Improving the Critical Thinking Skills of Elementary School Students in Social Science Learning (Yohanes Vianey Sayangan et al. 2024)</p>	<p>The discovery learning model has been proven to have a significant positive impact on grade IV students of SDI Rutosoro based on the interpretation of quantitative data carried out, namely improving critical thinking skills, increasing the percentage of student involvement, verbal ability to ask and formulate arguments and make decisions in active learning, increasing intrinsic motivation and encouraging deep understanding in accordance with the concept of deep learning.</p>
<p>The Influence of the Discovery Learning Model on the Learning Outcomes of Social Science Cultural Materials in Elementary Schools (Eza Sri Maharani et al. 2025)</p>	<p>Based on the results of research on grade V students of SDN 1 Tigajuru, the discovery learning model can improve social studies learning outcomes, active participation of students in the learning process, meaningful understanding, Contextual and deep, improvement critical thinking skills, as well as appreciation of local values and traditions through hands-on experience as the main topics in research.</p>
<p>Implementation of Discovery Learning in Improving Mathematics Learning Ability of Elementary School Students (Retno Fidyah Nuryani et al, 2025)</p>	<p>Based on the results of interviews with teachers and students at SD Negeri Dermayon on mathematics learning, the positive impact experienced by students from Application of the Discovery</p>



	Learning Model is Improve
	students' independence in the learning process through their abilities, increasing student activity, improving critical thinking skills through learning experiences that train cognitive abilities, improve learning outcomes, and students become more enthusiastic. When learning because it is not monotonous lectures from teachers.
Development of a Guided Discovery Learning Model Based on E-Learning in Thematic Learning (Drajat Sukmanto Utomo dkk. 2023)	In a study at SDN 2 Temurejo, Blora, grade V, the discovery learning model with Google Classroom e-learning can significantly improve students' learning outcomes, become more active than the monotonous learning model, students feel happy when learning due to interaction with teachers and friends, and are more confident to ask questions in answer to the difficulties they face
The Effect of the Discovery Learning Model Assisted by Concrete Object Media on the Science Understanding of Class V Students (Sinta Anggi Nuriya & Enik Setiyawati, 2023)	Based on the results of an experiment with a One-Group pretest-posttest design on grade V students of SDN Glagaharum on science materials, the discovery learning model contributes to improving the conceptual understanding of science, problem-solving skills through contextual discussions together friends, increased enthusiasm for learning, and advanced thinking skills such as critical and analytical thinking.
Application of the Discovery Learning Model In Improving Students' Science Process Skills, Critical Thinking, and Confidence (Christina Lina Yuliati & Nancy Susianna, 2023)	Through classroom action research (PTK) on students of grade 1F SD XYZ Tangerang, the results obtained related to the impact of the discovery learning model on students are a significant increase in



	PPP with indicators of observation, classification, and communication ability, then an increase in critical thinking skills through a learning model with PPP activation, as well as a sense of self-esteem with indicators of accepting learning challenges and being brave take risks in completing tasks.
The Effectiveness of the Discovery Learning Model is Reviewed from the Critical Thinking Ability of Grade 5 Elementary School Students (Gustiana Dwi Suryaningrum & Mawardi, 2023)	Based on the results of the research using the Quasi-Experimental method with the design of Noneequivalent Control Group in 5th grade students of SD Negeri Karangduren 02, the discovery learning model Proven significantly improve critical thinking skills through students' active critical involvement in the learning process compared to traditional learning.

### Discussion

Analysis of the synthesis of 13 articles relevant to research topics related to the impact of learning model discovery learning For elementary school students in Table 3. Above, it can be concluded that this learning model has a very positive impact on them. Not only are the learning outcomes written in the students' final test results, but the learning model that emphasizes the construction of deep understanding improves advanced cognitive abilities such as critical thinking, analytical, problem-solving skills, and so on (Setiyawati, 2023). From the many impacts produced from research related to this learning model, researchers found a large impact pattern, namely the learning model discovery learning can improve 21st century skills in the acronym 6C, namely Critical Thinking (Critical Thinking Skills), Creativity (Creativity), Communication (Communicate), Collaboration (Collaborate), Citizenship (Certified), and Character (Character). This is due to the learning model discovery learning Contains a philosophy of deep learning approach (deep learning) in the form of a constructive learning strategy which is in line with the statement Fullan et al., (2018) Where the learning model with an emphasis on deep understanding can improve 21st century skills.

Furthermore, the learning model discovery learning emphasizing aspects of science process skills (KPS) in its implementation such as observing, communicating, inferring and other science process skills that are not only applied to science subjects only, but can be widely applied to other subjects, and this makes the learning model discovery learning as one of the variations of the multidisciplinary learning model (Maharani et al., 2025; Yuliati & Susianna, 2023). Because of the active learning process with the emphasis of PPP on each subject, this makes the accommodation of the 6C skill development of elementary school students can be carried out in any field of study during critical discussion activities, observation of in-depth contextual phenomena, group problem-solving projects, and activities that encourage the active involvement of other students so that students can independently find the concept of knowledge ongoing. Relying on PPP in learning represents constructive learning where understanding is actively formed and contributes to maintaining advanced thinking skills as stated



by Zaidan (2026). This also corroborates the statement of Lev Vygotsky, a figure of constructivist learning, that learning should be done constructively because advanced thinking skills are not a gift from nature, but an effort by humans themselves in building science (Bustomi & Ismail Sukardi, 2024).

In addition to encouraging 21st century skills, as a learning model with a student-centered approach, the discovery learning model increases active student engagement and makes the position of educator no longer dominate the classroom (Wafiqni et al., 2023). This makes learning no longer feel monotonous and boring for students because their presence is included in the learning process as previously explained. The follow-up impact is that learners become happy in learning, increase enthusiasm and deep curiosity, and become more interactive with educators (Utomo et al., 2023). This interaction between educators and students is very important, because it not only increases students' understanding of better and also deep emotional bonds, but also makes the character of their own students more courageous in expressing their thoughts and more confident (Yuliati & Susianna, 2023).

Finally, the impact of the discovery learning model can be seen directly through the value of student learning outcomes. This impact is a derivative impact of the overall causal of this learning model (Amalia Tamsir et al., 2025; Dwi Suryaningrum & Mawardi, 2023). The development of cognitive abilities and deeper understanding of the material through the activities mentioned earlier is the most important aspect in improving the learning outcomes of elementary school students.

## CONCLUSION

Based on the results of the research through *the Systematic Literature Review* approach, it can be concluded that *the discovery learning* model has a very positive impact on elementary school students. This model not only improves learning outcomes, but is also able to develop critical thinking, analytical, problem-solving, and other high-level thinking skills. In addition, *discovery learning* has been proven to increase student motivation, involvement, activeness, and confidence in the learning process.

This model supports the development of 21st century skills (6C) which include *critical thinking, creativity, communication, collaboration, citizenship, and character*. The application of science process skills in learning also makes this model flexible and can be applied to a wide range of subjects. Thus, *discovery learning* can be an effective alternative learning model to create student-centered, interactive, and meaningful learning. Therefore, teachers are advised to implement this model optimally to improve the quality of learning in elementary schools.

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