



The Improvement of Catholic Religious Education Learning Outcomes Through Application of Discovery Learning in Elementary Schools

Volume 16 Issue 2
(Oktober, 2025)

e-ISSN 2716-5191
doi: 10.30997/jsh.v16i2.16675

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ARTICLE INFO

Article history:

Received: 19-12-2024

Revised version received: 20-12-2024

Accepted: 24-09-2025

Available online: 11-10-2025

Keywords:

Discovery learning; learning outcomes; Catholic religion; elementary schools.

How to Cite:

APA Style 7th

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ABSTRACT

Religious education is crucial in instilling core values to shape the character of elementary school students. The purpose of this study is to improve the learning outcomes of Catholic Religious Education for elementary school students through the use of discovery learning. The subjects of this research are the fourth-grade students of SDN Mananga Aba. The research method used is Classroom Action Research, which includes planning, implementation, observation, and reflection. Data collection was done using a test technique, consisting of 10 multiple-choice questions. The data analysis is descriptive covering student completion, class completion, and the analysis of teacher and student activity observations. The results of this study show that, in cycle I, students achieved a score of 65, which increased to 85 in cycle II. The teacher activity observation score in cycle II was 96, while in Cycle I it was 56. The student activity observation score in cycle II was 96, while the cycle I score was 63. The teacher and student scores in cycle II have reached the Good category. This research concludes that the implementation of discovery learning can improve the learning outcomes of fourth-grade students at SDN Mananga Aba. This finding implies an enhancement in teachers' comprehension and abilities in utilizing discovery learning to further improve student achievement.

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1. Introduction

The teaching and learning process is the implementation of the lesson plan designed by the teacher. In this implementation, the role of the teacher is crucial in creating and developing

learning activities. The teacher's responsibility goes beyond simply delivering the material; they must also motivate students and serve as a positive role model in accordance with their area of expertise (Capp, 2017; Maba, 2017; Lee et al., 2017). A learning plan is a document that details the objectives, content, methods, and assessments to be applied in the learning process. This planning serves as a guide that directs the course of the teaching and learning process, where both the teacher and students carry out the steps that have been outlined, starting from the opening, the core activities, to the closing (Fujii, 2016; Abidah et al., 2020).

The implementation of teaching involves activities that support the achievement of learning objectives, such as the use of media, approaches or methods, and assessments to measure learning success (Hamid et al., 2020; Ilmi et al., 2021). The implementation of teaching is the practical application of what has been planned, ensuring that learning objectives are achieved effectively and efficiently (Simamora, 2020; Tamsah et al., 2021). The lesson plan is not merely a theoretical document, but is translated into actions carried out in the classroom (Flores & Gago, 2020).

Based on the observations conducted by the researcher at SDN Mananga Aba, particularly in the fourth-grade class, it was found that during the religious education lessons, students tended to hesitate to ask questions even when they encountered difficulties or did not understand the material being presented. Despite the teacher providing opportunities for questions, students appeared to struggle with staying focused during the lesson. Additionally, the motivation and interest of the students in religious education seemed to be low, with some students exhibiting irregular attendance in class. It was apparent that the learning activities were predominantly dominated by teacher explanations, followed by question-and-answer sessions and assignments for the students. This one-way teaching approach led to passive student engagement, where students merely received the material and took notes without active participation in the learning process (Indrilla, 2018; Vokić & Aleksić, 2020). The emerging issues have become obstacles that hinder the achievement of the Catholic Religious Education learning objectives at SDN Mananga Aba, ultimately affecting students' learning outcomes.

In light of these issues, it is evident that steps to integrate active learning models into the teaching process are essential. Various teaching models are available, most of which have the potential to enhance Catholic Religious Education learning outcomes. Discovery learning can serve as an effective solution to improve student achievement. This model is implemented to encourage active learning through investigation and discovery by the students themselves, ensuring that the learning outcomes are more durable and retained in students' memory (Martaida et al., 2017; Fahmi et al., 2019).

Discovery learning helps students understand the content to be studied by acquiring information independently, while also facilitating the construction of knowledge they have gained (Simamora et al., 2019; Shah, 2019). Therefore, as a solution to the challenges in teaching, teachers can apply the discovery learning model, which not only serves to activate students but also stimulates their creativity and helps enhance their religious knowledge at the elementary school level (Chusni et al., 2021).

Various studies have demonstrated the effectiveness of the discovery learning method in improving students' academic performance. A quasi-experimental study revealed that discovery learning had a positive impact on three out of the four 21st-century skills known as the 4C framework, namely critical thinking, creative thinking, and collaboration, when compared to the expository method. However, communication skills were found to be higher with the expository method than with discovery learning (Putra et al., 2020). In contrast to this study, the current research focuses more on improving student learning outcomes through the application of discovery learning in classroom action research.

A study using a mixed-method approach in discovery learning at elementary schools showed that, quantitatively, there were 14 students in the high category, 38 students in the

medium category, and 14 students in the low category. Qualitatively, the study found that the discovery learning method encouraged students to engage in active, independent learning and demonstrated high enthusiasm in seeking learning resources (Chusni *et al.*, 2021). Unlike this study, the present research focuses more on a qualitative investigation within the context of classroom action research aimed at improving students' academic achievement in Catholic Religious Education.

Another experimental study also demonstrated a 12% impact of applying discovery learning on the integrated thinking and critical thinking abilities of elementary school students, compared to the expository method (Syolendra & Laksono, 2018). Unlike this study, the current research does not use statistical testing but focuses on analyzing the improvement in students' learning outcomes. A different quasi-experimental study comparing student learning outcomes between discovery learning and other models found the effectiveness of the discovery learning model. The findings of this study were reinforced by hypothesis testing that showed a significant difference in student achievement between the two teaching models. Descriptive data also revealed that students using discovery learning achieved a score of 84.5, while students engaged in inquiry learning scored 78.9 (Lukitasari *et al.*, 2020).

Another study using a literature review method described the impact of discovery learning on elementary school students' mathematics learning outcomes. Interestingly, in this study, each step in the discovery learning process showed different effects on various aspects. For example, the problem formulation stage was found to have significant potential in enhancing students' observation skills, motivation, and critical thinking. Meanwhile, the verification phase was shown to foster skills in drawing conclusions, communication, and group discussions (Kamaluddin & Widjajanti, 2019). However, unlike this study, the present research focuses on the application of discovery learning within classroom action research to improve students' academic achievement.

This study is focused on a scientific examination of the use of discovery learning to enhance students' academic achievement in Catholic Religious Education in fourth-grade elementary school classes. This research can broaden the perspective for Catholic Religious Education teachers. Although this subject has its distinctive teaching methods, such as the catechetical method, this study offers discovery learning as a solution-oriented alternative to facilitate student engagement while simultaneously improving their learning outcomes

2. Methods

This study involved 12 4th grade students of Mananga Aba State Elementary School in Loura District, Southwest Sumba Regency. This study uses a classroom action research approach with reference to the model developed by Kemmis and McTaggart, as cited by Putra *et al.* (2022) and is visualized systematically in Figure 1.

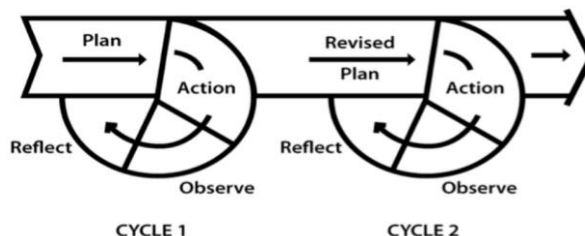


Figure 1 Classroom action research cycle

In the planning stage, the researcher designed learning tools that included lesson plans, teaching materials, student worksheets, evaluation test instruments, and observation sheets. At the implementation stage, the researcher implemented the learning process in the classroom

by following the steps of the discovery learning approach as previously designed. At the observation stage, two observers conducted peer observations of the activities of teachers and students to ensure the implementation of each stage in the discovery learning model. At the reflection stage, the researcher conducted an analysis and evaluation of the learning process that had taken place in order to identify the strengths and weaknesses of the implementation of the action as a basis for planning improvements in the next cycle. The implementation of the discovery learning model at the implementation stage refers to the framework developed by Veermans, as quoted by Fahmi et al. (2019), which includes five main components: orientation, hypothesis formulation, hypothesis testing, drawing conclusions, and learning regulation.

The research data were obtained through test and observation methods. The test was used to measure student learning outcomes after cycle I and cycle II. The test instrument was in the form of 10 multiple-choice questions that were in accordance with the learning objectives. Observations were made on teachers and students. Observations on teachers aimed to ensure that the implementation of learning was in accordance with the Discovery Learning syntax, while observations on students aimed to assess the level of active involvement of students in the learning process. Data analysis included analysis of individual learning completeness, classical learning completeness, and analysis of observation results. Analysis of individual completeness and observation was carried out using the formula proposed by Yusani & Lubis (2024) as shown in Figure 2.

$$\text{Student Completion} = \frac{\text{Obtained Score}}{\text{Total Score}} \times 100$$

Figure 2 Formula for individual completeness, teacher and student activities

The criteria for assessing observation results refer to the guidelines put forward by Usman et al. (2017), as shown in Table 1.

Table 1 Criteria for observation results assessment

Score Range	Category
88-100	Very good
67-87	Good
46-66	Fair
25-45	Less

The analysis of class completion in each cycle is conducted using the formula proposed by Stringer (2014) as shown in the following Figure 3.

$$\text{Class Completion} = \frac{\text{Number of students who completed}}{\text{Total number of students in the class}} \times 100\%$$

Figure 3 Formula for class completion

The success indicators in this study were determined based on three criteria, namely: (1) individual learning completion score of ≥ 75 , (2) classical learning completion reaching at least 90% of the total number of students, and (3) the results of observations on the implementation of learning were in the Good category.

3. Results and Discussion

3.1. Results

This Classroom Action Research was conducted in 2 cycles, with each cycle consisting of two meetings using the discovery learning approach. The theme in Cycle I was "I Am Proud to Be a Man or a Woman and Respect the Belongings of Others", while the theme in Cycle II was "Being Grateful as a Man or a Woman with Abilities and Limitations". The students' learning outcomes in Cycle I and Cycle II are presented in Table 2 as follows.

Table 2. Learning Outcomes

Cycle	Complete	Percentage	Highest score	Lowest score	Mean
I	4	33	90	40	63
II	11	92	100	60	85

The student learning outcomes presented in Table 2 show a significant increase, namely from an average score of 63 in cycle I to 85 in cycle II. This increase is reflected in several indicators, including the number of students who master the material, the percentage of classical learning completion, the highest score, and the average class score. These findings indicate that the application of the learning approach in cycle II is more effective than cycle I. Thus, it can be concluded that the discovery learning model has proven effective in improving student learning outcomes in Catholic Religious Education subjects. Furthermore, the results of the analysis of student activities during the application of discovery learning in cycles I and II are presented in Table 3.

Table 3. Student Activities

Cycle	Score	Category
I	63	Fair
II	96	Very good

The average achievement of student activities during the discovery learning process, as shown in Table 3, showed a significant increase, namely from a score of 63 (Fair category) in cycle I to 96 (Very Good category) in cycle II. This increase reflects an increase in the effectiveness of student involvement in the discovery learning-based learning process. Furthermore, the results of observations of teacher activities during the implementation of learning are presented in Table 4.

Table 4. Teacher Activities

Cycle	Score	Category
I	65	Fair
II	97	Very good

The ability of teachers to implement discovery learning has a significant impact on student learning activities and outcomes. Based on the data listed in Table 4, there is an increase in the achievement of the learning implementation score by teachers, namely from a score of 63 (sufficient category) in cycle I to 96 (very good category) in cycle II. The increase in achievement shows that in cycle II the teacher succeeded in implementing discovery

learning effectively in the learning process. In cycle I, teachers still need significant improvements in implementing discovery learning, while in cycle II the teacher is able to manage the learning process more effectively, especially in implementing the learning model.

3.2. Discussion

The results of this study indicate that in cycle II there was a significant increase in scores, both in relation to student learning outcomes and the learning process involving the active role of teachers and students. The improvement in student learning outcomes through discovery learning can be analyzed from three main aspects, namely the advantages of the discovery learning method, support from previous research results, and implementation of learning during the learning process. First, theoretically, discovery learning has a number of advantages compared to other learning models. These advantages include: (1) positioning students as active subjects in problem solving (Suryanti et al., 2020), (2) encouraging increased student involvement in the learning process (Heilporn et al., 2021), (3) creating a creative learning environment that allows students to discover knowledge independently (Wartono et al., 2018), (4) strengthening understanding, memory, and knowledge transfer (Passalis & Tefas, 2018), and (5) facilitating the integration of new knowledge with previously acquired knowledge (Suardana et al., 2018). The skills developed through the application of discovery learning will encourage deeper mastery of the material, thereby contributing to improving student learning outcomes.

Second, various previous studies have confirmed the effectiveness of the discovery learning method in improving student learning outcomes from various perspectives, such as improving critical thinking skills (Asaleh, 2020), , developing creative thinking skills (Rahman, 2017), improving problem-solving skills (Nusantari et al., 2021), and improving student learning achievement (Sutiani et al., 2021). Thus, learning practices that use discovery learning have proven effective in improving student learning outcomes. Third, teacher practices in implementing discovery learning in this study contribute to improving student learning outcomes. Through discovery learning, teachers can provide effective stimulation that helps students start the learning process, encourages students to identify problems that need to be solved, facilitates students in exploring and processing data, and guides students in drawing conclusions (Ramdhani et al., 2017).

The application of discovery learning at the elementary school level aims to provide a more active, enjoyable, and meaningful learning experience for students. This approach not only supports students' conceptual understanding of learning materials, but also contributes significantly to the development of important skills needed by students, both in self-development and in dealing with practical problems in everyday life.

4. Conclusion

Based on the results of data analysis, it can be concluded that the application of the discovery learning model has proven effective in improving the learning outcomes of Catholic Religious Education of grade IV students at SDN Mananga Aba. The increase is shown through several indicators, including: the average class value increased from 63 in cycle I to 85 in cycle II; the percentage of learning completion increased from 33% to 92%; the average value of student activity increased from 63 (Fair category) to 96 (Very Good category); and an increase in the average value of teacher activity from 65 (Fair category) to 97 (Very Good category). This study provides significant implications for the implementation of the learning process, especially in teaching Catholic Religious Education. Teachers are expected not to only focus on conventional learning methods, but are able to develop innovative approaches that are in accordance with the characteristics of the material. Based on the findings of this study, it is recommended that teachers integrate the discovery learning model as an alternative

to improve the quality of the learning process and student learning outcomes. Teachers are also required to be more creative in choosing and implementing learning models and methods that are relevant to the topics in the Catholic Religious Education subject.

Acknowledgment

The researcher would like to express his gratitude to the Rector who always provides encouragement and support for research activities and scientific publications. Special gratitude is also conveyed to the teachers and students of SDN Mananga Aba for their dedication, participation, and cooperation that have been given so that the implementation of this research can run well and achieve the expected results.

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