

# APPLYING INSIDE-OUTSIDE CIRCLE COOPERATIVE LEARNING TO IMPROVE FIFTH-GRADE SCIENCE LEARNING OUTCOMES

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**Abstract:** Science learning in elementary schools often faces challenges such as low student participation and limited learning media, which can affect students' achievement. Therefore, this study aims to examine whether the Inside-Outside Circle (IOC) cooperative learning model assisted by question card media can improve science learning outcomes of fifth-grade students. The research was conducted at SD Negeri 60 Lubuklinggau using Classroom Action Research with the Kemmis and McTaggart model, consisting of two cycles: planning, action, observation, and reflection. The participants were Grade V students. Data were collected through tests, observations, and documentation, and analyzed using descriptive qualitative and descriptive quantitative techniques. The findings showed improvement in students' science achievement in each cycle. In Cycle I, the average pre-test score was 56.42 and the post-test score increased to 63.80. In Cycle II, the average pre-test score was 70.47 and the post-test score reached 76.66, with a gain score of 0.3 (moderate). In conclusion, the IOC model supported by question cards effectively improves students' science learning outcomes. It is suggested that teachers apply this strategy regularly and develop varied question cards to maintain students' engagement.

**Keywords:** *Learning Outcomes, Science, inside-out circle, question cards.*

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## INTRODUCTION

Education is a scope that studies the relationship between knowledge, skills, and behavior that is owned between groups and passed on to the next generation by being given

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learning, developing abilities or even research. Education is one aspect that is included in advancing a nation to become better. According to Andriani (2017:3), education is a basic need that is mandatory and must be received by every citizen to obtain knowledge or information that is no less important in the lives of individuals, families, nations and countries in preparing quality human resources and being able to face challenges in the future.

Good learning is that which successfully develops students' potential to the fullest. According to Suprihatiningrum (2013:75), learning is a series of activities involving information and the environment, structured in a planned manner to facilitate student learning, assisting students in absorbing the knowledge provided, and the efforts made to achieve learning goals.

Natural science is a group of sciences with a specific characteristic: the study of factual natural phenomena, whether in the form of realities or events, and their cause-and-effect relationships. Natural science is a human endeavor to understand the universe through precise observations, which have specific characteristics, and various phenomena, behaviors, or characteristics packaged into a set of theories (Yuliana in Suparman et al., 2020:2).

Science is a subject that provides a variety of knowledge about the natural world and its contents. This means that science studies all objects in nature, including the events and phenomena that occur in nature. Therefore, science is crucial for students from elementary school through college.

However, in reality, many students are less interested in science learning, they only see the pictures in printed books without knowing what events occur or what impacts arise from a natural event around them. Based on the results of observations and observations with fifth grade students of SD Negeri 60 Lubuk Linggau Semester II Academic Year 2024/2025. Information was obtained that students tend to be passive because during the learning process in class the teacher still uses conventional methods, namely delivering material through lectures and students are mostly asked to memorize rather than think critically. Students become passive and do not focus on the material presented by the teacher and finally students feel bored, tired, chat with classmates and disturb other friends. In addition, from the results of interviews with the homeroom

teacher of SD Negeri 60 Lubuk Linggau, information was obtained that some students still feel confused, so that the learning outcomes of fifth grade students are low. not until some students whose scores reach the KKTP set by the school of 75. This can be seen from the results of the daily science test of students from 21 students only 14.28% 4 students were able to reach the KKTP set by the school, while students who were unable to reach the KKTP 85.71% (17 students). It can be concluded that from grade V it is still not fully completed in science learning. To overcome the above problems, appropriate action is needed. The learning model that can make students interested in science learning and can actively participate in the ongoing learning process is cooperative learning type inside-out circle.

The Inside Outside Circle (IOC) learning method is a learning method that allows students to train their communication skills. Ngalmun, (2016): also stated that the Inside Outside Circle (IOC) learning method is a learning method with a small circle and large circle system. Where in this learning model, students are not only objects but also subjects. The Inside Outside Circle (IOC) learning model makes educational learning activities very effective in addition to creating a pleasant or not boring learning atmosphere. Here, students also practice independent learning and how to convey information well to others by exchanging information, one of the wisdoms is that students establish good communication and socialization with each other.

Based on the results of observations that researchers have conducted at SD Negeri 60 Lubuk Linggau, researchers found several obstacles experienced by students, especially in science lessons. Students who are less interested in science learning, they only see pictures in printed books without knowing what events occur or what impacts arise from a natural event around them. Based on the results of interviews conducted by researchers on May 21, 2025 with the homeroom teacher of grade V, namely Jumiyanto, S.Pd. obtained information that currently grade V at SDN 60 Lubuk Linggau uses the Merdeka curriculum. The Minimum Completion Criteria for Science lessons is 70. The number of grade V students is 21 people. Students' obstacles during the learning process are differences in students' levels of understanding in understanding the learning material. Especially in science subjects, students will have difficulty understanding and trying to

solve problems. Thus, teachers need to repeat explanations and provide examples that are easy for students to understand.

Based on the description above, the researcher is interested in conducting a classroom action research. This research aims to improve the science learning outcomes of students at SD Negeri 60 Lubuk Linggau. Therefore, the researcher chose the research title "Implementation of Inside-Out Circle Cooperative Learning to Improve Science Learning Outcomes of Fifth Grade Students in Elementary School."

## **METODOLOGI**

### **Research Design**

This research was conducted at SD Negeri 60 Lubuk Linggau in the second semester of the 2024/2025 academic year. The participants were 21 fifth-grade students, consisting of 10 boys and 11 girls. This study employed Classroom Action Research (CAR). Arikunto et al. (2020) state that CAR is a systematic effort carried out by teachers to observe students' learning activities and identify improvements in learning outcomes after an action is implemented. In this research, students were involved in a series of teacher-guided learning activities intended to support meaningful improvement in achievement. Rubiyati (2022) explains that each CAR cycle consists of four stages: planning, implementation (action), observation, and reflection. These stages form a continuous and integrated process in one cycle. Similarly, the Kemmis and McTaggart model emphasizes that a cycle is completed through these four structured steps (Afandi, 2011).

## Research Subject

The subjects of this study were all 21 fifth-grade students of SD Negeri 60 Lubuk Linggau.

## Data Collection

Data collection techniques are procedures used by researchers to obtain information from relevant sources. Millah et al. (2023) explain that data collection refers to methods used to record and gather necessary data. In this study, data were collected using the following techniques:

### 1. Observation

Hasibuan et al. (2023) state that observation is a direct method of collecting data by recording real conditions experienced by the research subjects. Observation sheets were used to record teacher and student activities during the learning process. Two observation instruments were applied: a teacher activity observation sheet and a student activity observation sheet, which were completed by an observer.

### 2. Interview

Sugiyono (2021) defines interviews as a technique for collecting data through asking questions to respondents in order to obtain required information. The interview questions focused on learning models applied by the teacher, instructional media used, and students' responses to the learning activities.

### 3. Test

According to Gumantan et al. (2020), tests are instruments used to measure student learning outcomes after the instructional process. The tests in this study were aligned with the material taught and consisted of **15 essay questions in each cycle**, developed based on lesson indicators.

### 4. Documentation

Ardiansyah et al. (2023) explain that documentation is a method of collecting data in the form of photographs or records as evidence that the research was conducted. In this study, documentation supported and strengthened the research findings.

## Data Analysis

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Sugiyono (2018) states that data analysis is the process of systematically organizing data obtained from interviews, field notes, and documentation into categories and patterns in order to draw conclusions. Miles and Huberman (as cited in Sugiyono, 2018) explain that qualitative data analysis is conducted interactively and continuously during and after data collection until data saturation is achieved.

This classroom action research applied both quantitative and qualitative data analysis, as described below:

### **1. Quantitative Data Analysis**

Quantitative data were obtained from students' test results and were analyzed using simple statistical techniques.

#### **a. Mean (Average) Score**

Students' learning outcomes were considered improved if the average score increased after the implementation of learning activities. The mean score was calculated using the following formula (Ariyani & Djamudi, 2023):

$$X = \Sigma A / \Sigma N$$

Description:

X = Mean score

$\Sigma A$  = Total student scores

$\Sigma N$  = Number of students

#### **b. Individual Mastery**

Students' scores were compared with the Minimum Mastery Criteria (KKTP) set at 70. A student achieved mastery if their score was  $\geq 70$ , and did not achieve mastery if the score was  $< 70$ . The formula for individual mastery is as follows (Emelda et al., 2019):

$$\text{Individual Completion} = (\text{Student Score} / \text{Maximum Score}) \times 100$$

#### **c. Classical Mastery**

Classical mastery was achieved if at least 70% of students reached individual mastery. If fewer than 70% achieved mastery, the learning process was considered unsuccessful classically. The formula used was (Emelda et al., 2019):

$$KS = (ST / N) \times 100\%$$

Description:

KS = Classical mastery

ST = Number of students who achieved mastery

N = Total number of students

## 2. Qualitative Data Analysis

Qualitative data were obtained through observation results in each cycle. The data were recorded using observation sheets and presented in the form of percentages (%). Student performance was categorized using the following interval criteria (Emelda et al., 2019):

Value (%)	Category
85%–100%	Very Good
75%–84%	Good
60%–74%	Enough
40%–59%	Incomplete
0%–39%	Failure

## RESEARCH RESULT

This classroom action research has the main objective of improving science learning outcomes in fifth-grade students of SD Negeri 60 Lubuklinggau. This research was conducted in two cycles. To determine whether there were changes in students' science learning outcomes in each cycle, data can be seen in the summary percentage table of science learning outcomes completion in cycles 1 and 2.

**Table 4.1**

**Percentage Summary of Science Learning Outcomes Cycle 1 and Cycle 2**

No	Siklus	<i>Treatment</i>	Nilai Rata-Rata	Tidak Tuntas		Tuntas		Jumlah	
				F	Persen (%)	F	Persen (%)	F	Persen (%)

1	Siklus 1	<i>Pre-test</i>	56,42	17	83,33%	4	16,66%	21	100%
		<i>Post-test</i>	63,80	11	54,16%	9	45,83%	21	100%
2	Siklus 2	<i>Pre-test</i>	70,47	5	62,5%	16	37,5%	21	100%
		<i>Post-test</i>	76,66	3	12,5%	18	87,5%	21	100%

Based on the data in table 4.1, it can be seen that the level of mastery of science learning outcomes in Class V has increased significantly. This can be assessed in the application of the Inside-Out Circle cooperative learning model assisted by question card media, the first learning cycle in class. In cycle I, the average pre-test score of class V students was 56.42 with a percentage of 16.66% of students who completed only 4 students out of 21 students who achieved mastery. However, after participating in learning with the application of the Inside-Out Circle cooperative learning model and learning media, there was an increase in student learning outcomes, with an average post-test score reaching 63.80 with a percentage of students who completed 45.83% or as many as 9 students had absorbed and mastered the material taught.

**Table 4.2**  
**Presentation of N Gain Scores**

<b>Siklus</b>	<b>Skor</b>	<b>Kategori</b>
Siklus 1	0,2	Rendah
Siklus 2	0,3	Sedang

Based on the table above, it can be concluded that the science learning outcomes of fifth-grade students at SD Negeri 60 Lubuklinggau improved across the research cycles. The calculation of the N-Gain Score supports this improvement. In Cycle I, the implementation of the Inside-Outside Circle cooperative learning model assisted by question card media on the topic of animals and their habitats resulted in an average N-Gain score of 0.2, which falls into the low category. Meanwhile, in Cycle II, students showed better progress, with the average N-Gain score increasing to 0.3, categorized as medium. These results indicate that the learning model and media contributed positively to students' understanding and achievement in science.

**Table 4.3**

**Percentage of Teacher and Student Activities in Cycle 1 and Cycle 2**

Aktifitas	Siklus I		Siklus II	
	P1	P2	P1	P2
Guru	74%	80%	95%	100%
Siswa	71%	76%	93%	100%

The table above shows the assessments given by observers. The assessments given varied for each cycle. In Cycle I, observations of teacher activity received scores of 74% and 80%. Assessments of student activity in Cycle I received scores of 71% and 76%.

In Cycle II, observations of teacher and student activity provided by observers received scores of 95% and 100%, respectively. Student activity received scores of 93% and 100%.

## CONCLUSION

The results of this study indicate an improvement in science learning outcomes for fifth-grade students at SDN 60 Lubuklinggau using the Inside-Out Circle model, assisted by question cards, in the second semester of the 2025/2026 academic year. This improvement is evident in the increase in average student learning outcomes after the intervention, compared to pre-intervention scores. This learning model successfully created a more active, participatory, and collaborative learning environment. Students not only passively received information but also actively engaged in discussions, asking questions, and exchanging knowledge with their peers. The interaction that took place in these two circles encouraged students to express their opinions more confidently, strengthened their understanding of the material, and honed their communication skills.

Thus, the Inside-Out Circle learning model proved to be an innovative and effective alternative to addressing student boredom with conventional learning methods and significantly contributed to improving the quality of learning processes and outcomes in the classroom.

## REFERENCES

- Afandi. (2011). *Langkah-langkah PTK Model Kemmis & McTaggart*.
- Andriani, D. S. (2017). Pendidikan sebagai kebutuhan dasar dalam kehidupan.
- Ardiansyah, et al. (2023). Documentation as a tool for collecting research data.
- Arikunto, S., et al. (2020). *Penelitian Tindakan Kelas*.
- Ariyani, & Djamudi. (2023). Mean score calculation in learning evaluation.
- Emelda, dkk. (2019). Teknik analisis hasil belajar: ketuntasan individu dan klasikal.
- Gumantan, et al. (2020). Tests as instruments to measure student learning outcomes.
- Hasibuan, et al. (2023). Observation as a direct data collection technique.
- Millah, A. S., et al. (2023). Analisis data dalam penelitian tindakan kelas. *Jurnal Kreativitas Mahasiswa*, 1(2), 140–153.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook* (2nd ed.). Thousand Oaks, CA: Sage.
- Ngalimun. (2016). *Strategi dan Model Pembelajaran*.
- Rubiyati. (2022). Menjelaskan tahapan PTK: perencanaan, tindakan, observasi, refleksi. *Academia: Jurnal Inovasi Riset Akademik*, 2(4), 282–290.
- Sugiyono. (2018). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.
- Sugiyono. (2021). *Metode Penelitian Pendidikan*. Bandung: Alfabeta.
- Suparman, et al. (2020). Science as factual natural phenomena and cause-effect relationships.
- Suprihatiningrum, J. (2013). *Strategi Pembelajaran: Teori dan Aplikasi*. Yogyakarta: Ar-Ruzz Media.
- Yuliana. (2020). Konsep IPA sebagai upaya memahami alam semesta melalui observasi (dalam Suparman et al., 2020).