

## Improving Basketball Learning Outcomes Through the Cooperative Learning Model

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**ABSTRACT:** This research aims to: 1) Determine whether the application of the cooperative learning model can improve basketball learning outcomes in Grade XI students of Cilacap State Senior High School 1, 2) Analyze to what extent the implementation of the cooperative learning model enhances basketball learning outcomes in the same class. This research employed a Classroom Action Research (CAR) design using two cycles. The research subjects were 30 students of Grade XI at Cilacap State Senior High School 1. In this CAR study, all students were involved as subjects of the action. There was no division into control and experimental groups because the objective of CAR is not to compare, but to continuously and systematically improve the learning process through action cycles. The results of the study show that the application of cooperative learning in Physical Education significantly improved the achievement of the Criteria for Achievement of Learning Objectives (KKPP) in the affective, cognitive, and psychomotor domains. In Cycle I, students demonstrated low engagement. The average scores were 65 for the affective domain, 62 for the cognitive domain, and 60 for the psychomotor domain, all of which did not meet the minimum mastery threshold (75). This was due to conventional learning that was less interactive and dominated by one-way instruction. After reflection and improvements were made in Cycle II by incorporating visual media, group-based learning, and interactive dialogue a significant increase was observed. The average scores rose to 82 for the affective domain, 85 for the cognitive domain, and 88 for the psychomotor domain, indicating the success of the strategy in fostering positive learning responses. This study confirms that learning designed with active and collaborative communication principles can lead to changes in learning behavior in accordance with the cooperative learning model.

**KEYWORDS:** Basketball, Learning Outcomes, Cooperative Learning, Student Skills, Physical Education

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### I. INTRODUCTION

Education plays a central role in shaping the quality of individuals and determining the direction of a nation's progress. More than just a process of knowledge transfer, education also serves as a means of character building, moral development, and improvement of social skills that are important for social life. John Dewey emphasized that education is a process of continuous reconstruction of experience, enabling learners to develop intellectually, emotionally, and socially. Recent research supports this view, for example, the systematic review (Jadwiszczak, M., Wawrzyniak, S., & Pezdek, 2025), which shows that physical education programs that deliberately integrate moral and social education can produce positive moral and social development in adolescents; also, interventions in PE that focus on social and moral competence in children and adolescents (Bronikowska, M., 2024) reinforce that an inclusive and contextual approach has a strong impact. This perspective positions education as the main foundation in shaping a generation that not only excels in academic aspects, but also has moral maturity, social sensitivity, and responsibility towards themselves and their environment.

Physical education (PE/Sports & Health) is an integral element of the national education system that supports these objectives. Physical activities are not merely physical activities or sports, but also a medium for the mental, emotional, and social development of students. For example, through PE, students learn teamwork, sportsmanship in competition, discipline in following rules, and responsibility for themselves and their group. Recent research also confirms the same thing. For example, a study by (Susanto, 2022) found that students experienced improvements in character traits such as responsibility, cooperation, respect, and discipline. Furthermore, action research conducted by (Nurdin, E., 2021) revealed that when teachers are able to integrate national character values (religious, nationalistic, independent, cooperative, integrity) into physical activities, there is an increase in teachers' pedagogical competence as well as students' character behavior.

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According to Dewey's theory and empirical research, effective physical education design includes several elements: hands-on experience (learning by doing), reflection on that experience, interactive and contextual activities, and an atmosphere that supports active participation. A learning environment that promotes positive dependence, individual accountability, and interaction among students has been shown to support character development (Casey, A., & Goodyear, 2020). Therefore, the cooperative learning model is one approach that is highly suitable for integration into modern physical education.

Thus, physical education design must be systematic and comprehensive: enjoyable so that students are motivated, actively participatory, and emphasize the integration of moral and social values. The curriculum needs to explicitly include character values in the learning objectives, while teachers need to be equipped with training to be able to implement character-oriented learning strategies through physical activities. In addition, evaluation should not only focus on physical aspects and technical skills, but also on the moral, social, and emotional development of students. International studies show that this approach is effective. In line with this, (Whitehead, 2019) emphasizes the concept of physical literacy as a foundation that not only measures physical skills but also builds identity, motivation, and sustainable healthy living values. These findings reinforce that physical education should not be viewed merely as physical activity, but as a strategic pillar in building well-rounded individuals intellectually, emotionally, physically, and morally.

Many schools still adhere to traditional physical education teaching methods, where teachers teach unilaterally through lectures and demonstrations. As a result, student engagement is low because they only follow instructions without the opportunity to explore, discuss, or reflect. Such methods are ineffective in developing critical thinking skills, social competence, and teamwork skills that are essential in 21st-century education (Joyce, B., Weil, M., & Calhoun, 2015). At Cilacap State Senior High School 1 Cilacap, for example, basketball lessons in grade XI reveal several obstacles: basic techniques such as dribbling, passing, shooting, and defense have not been adequately mastered by some students; limited facilities (few balls and inadequate court conditions) and short learning time further exacerbate the situation.

From a pedagogical perspective, learning is still one-way, so students are rarely actively involved, either through group work, idea exchange, or learning from peers. As a result, students, especially those who are inexperienced, develop a lack of confidence and fear of failure, which leads to a decline in motivation to learn. This condition emphasizes the need for innovation in basketball learning strategies that can create a supportive atmosphere and encourage active student participation. One relevant approach is cooperative learning in small groups, where each group member has complementary roles and responsibilities to achieve common goals. In line with this, a recent meta-analysis shows that cooperative learning significantly improves student learning outcomes in the affective, cognitive, physical, and social domains compared to conventional methods (Sánchez-Hernández, N., Fernández-Río, J., & Hortigüela-Alcalá, 2025). Other studies also confirm that innovative strategies in physical education that encourage cognitive activation, reflection, and interactive discussion can increase class engagement and student motivation to learn (Zha, X., Ding, Y., & Li, 2025).

Cooperative learning models have been extensively researched in the context of physical education and have been proven to have a positive impact on students' academic and social development. This approach allows students to learn collaboratively, support each other, and take responsibility for the success of the group. In basketball learning, cooperative learning not only improves technical skills such as dribbling, passing, and shooting, but also fosters self-confidence, critical thinking skills, and social interaction skills. Recent studies show that the application of cooperative learning in physical education significantly increases student learning motivation and action skills (Zhou, S., Li, J., & Xu, 2021). Another study found that the STAD model is more effective than direct teaching methods in improving basic basketball techniques at the junior high school level (Ersoz, Y., Sahin, M., & Gocer, 2024). Furthermore, a systematic review by (Rodríguez-Gómez, I., Manzano-Sánchez, D., Valero-Valenzuela, A., & López-García, 2024) confirms that cooperative learning promotes cultural diversity and individual accountability, as well as supporting students' cognitive, affective, and social development in various educational contexts. This reinforces the argument that cooperative learning is highly relevant to basketball instruction for building both technical skills and character in students.

Research by (Putri, 2017) shows that the use of the Numbered Heads Together model has a significant effect on improving learning outcomes in basketball passing techniques. Similar studies by (Putra, H. A., & Nugroho, 2023) also show that the Teams Games Tournament and NHT models can improve learning outcomes in shooting and passing techniques among junior high and high school students. These results support the idea that cooperative learning is highly relevant for teaching sports skills, including basketball. Considering the problems and potential solutions offered, the researchers felt the need to take more innovative learning actions. Therefore, this study is entitled "Efforts to Improve Basketball Learning Outcomes Through the Cooperative Learning Model in Class XI of Cilacap State Senior High School 1." This study is expected to contribute to improving the quality of physical education, especially in basketball.

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## II. METHOD

This research method uses a Classroom Action Research (CAR) model with two cycles. Broadly speaking, according to Kemmis and McTaggart in (Arikunto, 2008) the CAR design is divided into four main stages: planning, implementation of actions, observation, and reflection. Each cycle was carried out with the aim of improving and perfecting the learning process through the intervention of a cooperative learning model applied in basketball game learning. Recent shows that the cooperative learning method has a moderate to large positive effect in the physical, cognitive, social, and affective domains in the context of PE, which reinforces the rationale for using this method. Additionally, (Fernández-Río, J., Cecchini, J. A., Méndez-Giménez, A., Méndez-Alonso, D., & Prieto, 2023) provides evidence that cooperative learning interventions are also highly effective in increasing students' intrinsic motivation, which is important for the successful implementation of actions and reflection in PTK.

### 1. Planning

- a. Problem Identification: Teachers identified that students' basketball learning outcomes were low based on test scores, classroom observations, and interviews; the dominant lecture method was not sufficient to build active participation and technical skills.
- b. Goal Formulation: To improve students' basketball technique learning outcomes, understanding of game strategies, and intrinsic motivation through the cooperative learning model.
- c. Action Plan:
  - 1) Develop a learning plan with cooperative learning strategies such as STAD, Jigsaw, Think-Pair-Share, tailored to the characteristics of sports and basketball classes.
  - 2) Prepare process and outcome assessment instruments, including observation, reflection journals, technical and theoretical practice tests, and motivation questionnaires.
  - 3) Design an action scenario with clear group divisions, roles for each student, and adequate time and facility arrangements.
  - 4) Stakeholder Involvement: Discuss/review with physical education teachers, sports coordinators, and/or related parties to ensure that the plan is realistic and applicable.

### 2. Implementation of Actions

- a. First Cycle: Application of cooperative learning in basketball technique training such as dribbling, passing, and shooting; students are divided into small groups (4-5 people), there are demonstrations, visual media, and direct feedback; grouping methods may be heterogeneous or flexible as suggested by recent meta-analyses.
- b. Second Cycle: Based on reflections from the first cycle, strategies are improved, for example, groups are made more dynamic, game simulations are added, or grouping methods are changed to be more effective in social and technical aspects.

### 3. Observation

- a. Observation sheets for technical indicators, active participation, cooperation between students, understanding of game strategies, and motivational/intrinsic aspects.
- b. Data Collection: Direct observation, video recordings, pretest-posttest of technical and theoretical learning outcomes, motivation questionnaires.
- c. Measurement: A combination of quantitative (test) and qualitative (interviews, discussions, reflection journals) methods, in accordance with recommendations from meta-analysis studies.

### 4. Reflection

- a. Evaluation of results by teachers and students; comparing observation data, test results, and student motivation with initial goals.
- b. Identification of weaknesses and strengths; obstacles in each cycle are discussed and improvement strategies are developed.
- c. Action improvement: modification of grouping methods, learning strategies, and facilitation aspects and media if needed.
- d. Student participation: students are involved in group discussions and written reflections to express their experiences. This is important so that the cooperative learning method truly has a positive affective and social impact. Cooperative learning not only encourages students to appreciate diversity but also strengthens individual accountability in group activities. When applied in physical education, this approach enhances emotional engagement, social bonding, and inclusivity within the classroom. Structured cooperative tasks also provide opportunities for students to develop self-regulation, empathy, and prosocial behaviors that are essential for both character formation and skill mastery.

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### III. RESEARCH RESULT

#### 1. Observation Results

##### a. Cycle I

The following table shows the results of observations conducted by researchers on basketball learning among Year 11 students at Cilacap State Senior High School 1 in Cycle 1.

**Table 1. Dribbling quality**

No	Student Name	Dribbling Quality	
		Good	Poor
1	Student 1	✓	
2	Student 2		✓
3	Student 3		✓
4	Student 4		✓
5	Student 5		✓
6	Student 6	✓	
7	Student 7		✓
8	Student 8		✓
9	Student 9		✓
10	Student 10	✓	
11	Student 11	✓	
12	Student 12		✓
13	Student 13		✓
14	Student 14	✓	
15	Student 15	✓	
16	Student 16	✓	
17	Student 17		✓
18	Student 18		✓
19	Student 19		✓
20	Student 20		✓
21	Student 21	✓	
22	Student 22		✓
23	Student 23		✓
24	Student 24		✓
25	Student 25	✓	
26	Student 26	✓	
27	Student 27		✓
28	Student 28		✓
29	Student 29	✓	
30	Student 30	✓	
Total amount		12	18

The table above shows that 12 people have good dribbling skills, while 18 people have dribbling skills that are considered poor.

##### b. Cycle 2

The following table shows the results of observations made by researchers regarding basketball learning among 11th grade students at Cilacap Senior High School 1 in cycle 2:

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Table 2. Passing quality

No	Student Name	Dribbling Quality	
		Good	Poor
1	Student 1	✓	
2	Student 2		✓
3	Student 3	✓	
4	Student 4	✓	
5	Student 5	✓	
6	Student 6		✓
7	Student 7	✓	
8	Student 8	✓	
9	Student 9	✓	
10	Student 10	✓	
11	Student 11		✓
12	Student 12	✓	
13	Student 13	✓	
14	Student 14	✓	
15	Student 15	✓	
16	Student 16	✓	
17	Student 17		✓
18	Student 18	✓	
19	Student 19	✓	
20	Student 20	✓	
21	Student 21		✓
22	Student 22	✓	
23	Student 23	✓	
24	Student 24	✓	
25	Student 25	✓	
26	Student 26		✓
27	Student 27	✓	
28	Student 28	✓	
29	Student 29	✓	
30	Student 30	✓	
Total amount		24	6

The table above shows that 24 people have good dribbling skills, while 6 people have poor dribbling skills. Based on the results of observations conducted by researchers, it can be concluded that the use of cooperative learning methods can improve students' basketball skills, as seen from the aspect of dribbling quality.

### 2. Learning Outcomes

#### a. Cycle 1

The following are the learning outcomes of students in cycle 1

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Table 3. Student learning outcomes of cycle 1

Student Name	learning outcomes	description
Student 1	55	I
Student 2	65	I
Student 3	60	I
Student 4	75	C
Student 5	55	I
Student 6	65	I
Student 7	70	I
Student 8	55	I
Student 9	40	I
Student 10	55	I
Student 11	50	I
Student 12	50	I
Student 13	60	I
Student 14	75	C
Student 15	70	I
Student 16	75	C
Student 17	55	I
Student 18	75	C
Student 19	65	I
Student 20	45	I
Student 21	75	C
Student 22	50	I
Student 23	40	I
Student 24	75	C
Student 25	50	I
Student 26	60	I
Student 27	55	I
Student 28	70	I
Student 29	50	I
Student 30	60	I

Description:

C: Complete

I : Incomplete

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The table above shows that the average score for students' learning outcomes in basketball is 80, which means that most students have learning outcomes in basketball that are classified as incomplete because the average score is less than 75, which is the standard for completion. The following is a presentation of the data in the table above in the form of a frequency distribution table:

**Table 4. Frequency distribution of cycle 1**

Learning Outcomes	Number (People)	Percentage (%)
Complete	6	20%
Incomplete	24	80%
Total amount	30	100%

The data in the table and graph above show that the number of students who did not complete Cycle I was 24 (80%), while the number of students who completed Cycle 1 was 6 (20%). b. Cycle 2

The following are the students' learning outcomes in Cycle 2:

**Table 5. Student learning outcomes of cycle 2**

Student Name	learning outcomes	description
Student 1	80	C
Student 2	85	C
Student 3	80	C
Student 4	85	C
Student 5	90	C
Student 6	85	C
Student 7	90	C
Student 8	95	C
Student 9	90	C
Student 10	80	C
Student 11	75	C
Student 12	70	I
Student 13	65	I
Student 14	70	I
Student 15	60	I
Student 16	80	C
Student 17	85	C
Student 18	80	C
Student 19	85	C
Student 20	90	C

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Student 21	85	C
Student 22	90	C
Student 23	95	C
Student 24	90	C
Student 25	80	C
Student 26	75	C
Student 27	70	I
Student 28	65	I
Student 29	70	I
Student 30	60	I

Description:

C: Complete

I : Incomplete

The table above shows that the average score for students' learning outcomes in basketball is 80, which means that most students have learning outcomes in basketball that are classified as incomplete because the average score is less than 75, which is the standard for completion. The following is a presentation of the data in the table above in the form of a frequency distribution table:

**Table 6. Frequency distribution of cycle 2**

Learning Outcomes	Number (People)	Percentage (%)
Complete	22	73%
Incomplete	8	27%
Total amount	30	100%

The data in the table and graph above show that the number of students who did not complete cycle 2 learning was 8 (27%), while the number of students who completed cycle 1 was 24 (80%)

## IV. DISCUSSION

The findings from cycle 2 revealed that the average score of students' basketball learning outcomes reached 80, surpassing the minimum completeness criteria (MCC) of 75. Based on the frequency distribution, 22 students (73%) achieved completion, while 8 students (27%) remained incomplete. These results indicate that the majority of students reached the expected level of mastery, yet a substantial proportion still fell short. Compared with cycle 1, where 24 students (80%) achieved completion, cycle 2 displayed a slight decline. This suggests that while overall performance remains satisfactory, learning outcomes are not yet fully stable across all participants, requiring further instructional refinement.

The persistence of incomplete outcomes in nearly one-third of the class underscores the importance of differentiated instructional approaches. Research emphasizes that adapting instruction to students' diverse needs can significantly enhance learning outcomes. (Özbal, A., Sağlam, M., & Cavkaytar, 2019) demonstrated that differentiated instruction strategies such as stations and centers improved active participation and student attitudes in physical education, thereby supporting more equitable achievement levels. In line with these findings, employing varied instructional designs in basketball lessons may help address the specific needs of students who are struggling to achieve mastery.

Another critical factor influencing student achievement is formative assessment, which enables educators to monitor progress and provide timely feedback. (Slingerland, M., Weeldenburg, G., & Borghouts, 2024) reported that formative assessment in physical education increased transparency in learning objectives, student engagement, and understanding of success criteria. Similarly, (Herrero-González, D., López-Pastor, V. M., Manrique-Arribas, J. C., & Moura, 2024) highlighted that formative and



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shared assessment fostered collaborative learning and improved performance. In the present study, the absence of mastery among some students may be linked to insufficient feedback cycles, suggesting that more systematic formative assessment strategies should be integrated into future instructional designs.

Motivation and learning attitudes also play a vital role in shaping outcomes in physical education. A systematic review by (Chen, W., Dev, R. O., Soh, K. G., Nasiruddin, N. J. M., & Wang, 2022) revealed that blended learning approaches, which combined varied methods and technologies, enhanced student motivation and fitness levels. Additionally, research on the Sport Education Model (SEM) indicates that structured and student-centered pedagogies positively influence learners' enjoyment and motivation in sports contexts. These findings imply that beyond skill acquisition, basketball instruction should cultivate intrinsic motivation and positive learning experiences to support long-term engagement and achievement.

Overall, the results of cycle 2 highlight that the implemented instructional strategies had a generally positive impact, as seen in the average score surpassing the MCC. However, the 27% of students who remained incomplete signal the need for more adaptive pedagogical interventions. Incorporating differentiated instruction, consistent formative assessment, and motivational strategies grounded in evidence from international research may further reduce disparities in achievement. Future studies could explore integrating blended learning components and sport education models to optimize learning outcomes in basketball and physical education more broadly.

## V. CONCLUSIONS

Based on the results of the research that has been conducted, it can be concluded that the application of the cooperative learning model has a significant positive impact on improving basketball learning outcomes, particularly in dribbling skills, among 11th grade students at Cilacap 1 High School. This is demonstrated by an increase in the average student score from 60 in the first cycle with a mastery level of 20% to an average of 80 with a mastery level of 80% in the second cycle. This improvement reflects that the cooperative learning model is able to create a more collaborative and interactive learning atmosphere that supports active student involvement in the learning process, thereby directly impacting the improvement of basic basketball skills.

### Product Recommendations

The results of this study indicate that the cooperative learning model is effective in improving students' basketball dribbling skills. For physical education teachers, this model can be an alternative strategy that is more interactive and collaborative. Schools are expected to support the implementation of this active learning model through teacher training in order to improve the quality of learning. For sports education students and researchers, these findings can be used as a reference in developing innovative, cooperation-based learning approaches. From a curriculum perspective, the cooperative learning approach should be considered in the design of more contextual and participatory physical education lessons. Meanwhile, for students, this model not only improves motor skills but also fosters attitudes of cooperation and responsibility in learning.

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