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# Improvement of Front Roll Learning Outcomes Through the Application of a Cooperative Learning Model With the Help of Audiovisual Media in Students in Grades X-9 of SMAN 1 Banjarbaru

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**Abstract**

This research was conducted based on the low learning outcomes of students in grades X-9 of SMA Negeri 1 Banjarbaru on the front bolster floor gymnastics material. Although cooperative learning models and audiovisual media have been widely applied in Physical Education learning, there is still limited classroom action research that examines the combination of the two in improving the learning outcomes of the front roll through group cooperation activities, peer observation, and structured feedback. This research aims to improve students' front rolling skills through the application of a cooperative learning model assisted by audiovisual media. The research uses the Classroom Action Research (PTK) method which is carried out in two cycles, with each cycle including the stages of planning, implementation of actions, observation, and reflection. The research subjects amounted to 35 students consisting of 12 male students and 23 female students. The research instruments are in the form of observation sheets and learning outcome tests that have been validated by PJOK teachers. The data was analyzed using quantitative descriptive analysis techniques by calculating the percentage of learning completeness and average student scores in each cycle. The results of the study showed that there was an increase in student learning outcomes at each stage of action. In the initial condition, learning completeness reached 26% with an average score of 62. After the implementation of the action in Cycle I, the completeness of learning increased to 57% with an average score of 77. In Cycle II, the completeness of learning increased again to 86% with an average score of 85. Based on the results of the research, it can be concluded that the application of the cooperative learning model assisted by audiovisual media contributes to the improvement of the learning outcomes of students in grades X-9 of SMA Negeri 1 Banjarbaru.

**Keywords:** Learning Outcomes; Front Roll; Cooperative Learning; Audiovisual Media.

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## INTRODUCTION

Ideal learning conditions in the curriculum emphasize the creation of a student-centered learning process so that students are able to learn actively, creatively, and independently in developing knowledge, skills, and attitudes. In the learning process, teachers not only play the role of delivering material, but also as facilitators who guide students to discuss, collaborate, think critically, and solve problems related to daily life. Learning is also expected to take place in a fun, safe, and conducive atmosphere so that students feel comfortable and motivated to learn.

Physical, Sports, and Health Education (PJOK) is an important part of the educational process that aims to develop physical fitness, movement skills, critical thinking skills, social skills, emotional stability, and the formation of a healthy lifestyle for students. According to (Khoiri, 2024) Learning is a process of interaction between educators and students that aims to produce changes in aspects of knowledge, skills, and attitudes. Therefore, PJOK learning requires learning models, media, and strategies that are in accordance with the characteristics of the material and the needs of students so that learning goals can be achieved optimally.

One of the PJOK materials taught at the high school level is floor gymnastics, especially the front rolling movement. The front roll is a basic movement of floor gymnastics that requires body coordination, balance, agility, strength, and courage of students in making movements.

Mastery of the front rolling technique is very important because it is the basis for mastering various other gymnastics skills. However, in learning practice, there are still many students who have difficulty understanding and practicing the basic techniques of front rolling correctly and safely.

Various previous studies have shown that the cooperative learning model is able to increase student activeness, social interaction, and learning outcomes in PJOK learning. Through cooperative learning, students get the opportunity to learn in groups, discuss, help each other, and exchange experiences in understanding the learning material. On the other hand, the use of audiovisual media has also been proven to increase students' understanding of learning materials because it is able to present information visually and audio so that it is easier to understand. In learning floor gymnastics, audiovisual media can help students observe the sequence of movements, body positions, and movement implementation techniques more clearly and concretely.

However, most previous studies have examined the use of cooperative learning models or audiovisual media separately. Research that combines these two approaches in learning floor gymnastics, especially in front bolster material at the high school level, is still relatively limited. In addition, there has not been much classroom action research that integrates audiovisual-assisted cooperative learning with *peer observation activities*, recording movement errors, group discussions, and collaborative technique correction. In fact, the combination of these strategies has the potential to increase student involvement in the learning process while helping students understand and correct movement mistakes more effectively.

Based on the results of initial observations during the implementation of Field Experience Practice (PPL) in class X-9 of SMA Negeri 1 Banjarbaru, several problems were found in PJOK learning in the front rolling material. Most students look less active during the learning process. Students also still lack confidence when asked to practice the front roll movement, and some students even feel afraid of making mistakes during practice. In addition, students have not understood the sequence of movements and basic techniques of front rolls well. This condition has an impact on the low learning outcomes of students. Of the 35 students, only 9 students (26%) have achieved the Minimum Completeness Criteria (KKM) with an average class score of 61, while the other 26 students (74%) have not achieved learning completeness.

These problems show that the learning process that is carried out has not been fully able to increase student activity, confidence, and learning outcomes. Therefore, a learning action is needed that is able to create a more active, interesting, and engaging learning atmosphere for students directly in the learning process. One alternative that can be applied is a cooperative learning model combined with audiovisual media. According to (Prieto-saborit et al., 2025) Cooperative learning is a structured learning approach, in which students work together in groups to achieve shared learning goals through positive dependence, individual responsibility, interaction between learners, social skills, and group evaluation. Therefore, teachers need to manage group dynamics effectively so that each member has a balanced opportunity to participate and contribute to the learning process. Meanwhile, (Suwanto, 2024) stated that the use of audiovisual media in PJOK learning can increase students' understanding of movement techniques and help students get a clearer picture of the implementation of the skills learned

The novelty of this research lies in the application of audiovisual-assisted cooperative learning, where audiovisual media is not only used as a means of demonstration of movement techniques, but also combined with peer observation, recording of movement errors, group discussions, and collaborative technique correction in front roll learning. Through this approach, students not only play the role of movement actors, but also observers and feedback givers to their groupmates so that the learning process becomes more active, reflective, and meaningful.

Based on these problems, this study aims to improve the learning outcomes of students in grades X-9 of SMA Negeri 1 Banjarbaru through the application of a cooperative learning model assisted by audiovisual media. This study focuses on improving students' front rolling skills as shown through an increase in average scores and percentage of learning completeness. Therefore, the researcher carried out Class Action Research (PTK) with the

title "Improvement of Front Roll Learning Outcomes Through the Application of a Cooperative Learning Model with the Help of Audiovisual Media In Students In Grades X-9 of SMAN 1 Banjarbaru".

## METHOD

This research is a collaborative and participatory Class Action Research (PTK). PTK is research conducted by teachers in their own classrooms through self-reflection with the aim of improving the learning process and improving student learning outcomes (Arikunto, 2021). This study uses the Kemmis and McTaggart model which consists of four stages in each cycle, namely planning, action implementation, observation, and reflection. The research is carried out in a cyclical manner until the success indicators that have been set are achieved.

The research was carried out at SMA Negeri 1 Banjarbaru, South Kalimantan in the even semester of the 2025/2026 Academic Year. The subjects of the study were all students of class X-9 totaling 35 students, consisting of 12 male students and 23 female students. The selection of class X-9 was based on the results of initial observations that showed low student learning outcomes in the front roll material, where only 26% of students achieved the Minimum Completeness Criteria (KKM).

The research was carried out in two cycles. Each cycle consists of three meetings, so that the entire research is carried out in six meetings. At the planning stage, the researcher compiled a teaching module, prepared audiovisual media in the form of a video of the front rolling technique, compiled student activity observation sheets, teacher observation sheets, and instrument assessment tools for front rolling skills. The *small group cooperative learning* model is applied by forming a heterogeneous group consisting of 4–5 students based on the students' initial ability. In each group, students play the role of movement implementers, observers, observers, and feedback givers in turn so that all group members are actively involved in the learning process.

Audiovisual media is used at the beginning of the core learning activities to provide a clear picture of the correct front roll technique. After observing the learning video, students discuss in groups to identify the correct movement stages. Next, the students took turns practicing the front roll, while the other group members observed the implementation of the movements carried out.

In Cycle I, audiovisual-assisted cooperative learning was carried out through observation activities, group discussions, and front roll practices. In each group, one student was tasked with recording the results of observations of friends' movements as material for discussion and feedback. The results of the reflection of Cycle I show that student involvement in observation activities is still uneven. Therefore, in Cycle II, action improvements were made by implementing more structured *peer observation*, where all group members observed and recorded the movements of friends. The results of the observation are then discussed together to obtain more diverse inputs and increase student participation and understanding of the front roll technique.

The research data consists of quantitative data and qualitative data. Quantitative data was obtained from the results of the front rolling skills test, while qualitative data was obtained through observation of student activities, observation of the learning process, and documentation of learning activities. The data collection techniques used include observation, skill practice tests, and documentation.

The learning outcome test instrument is a practice test of front rolling skills which is assessed using an assessment rubric that includes the initial stage, the implementation stage, and the final stage of movement. The rubric consists of 11 assessment indicators with a score range of 1–4, where score 1 = can't, score 2 = can't, score 3 = can, and score 4 = can't. The maximum score a student can get is 44 and a minimum score of 11. The final value is calculated using the formula:

$$\boldsymbol{Value} = \frac{(\textbf{Score obtained})}{\textbf{44}} \; \boldsymbol{x}\; \textbf{100}$$

Before being used in the research, the assessment instrument was validated through *content validity* validation by one Physical Education lecturer and one PJOK teacher of SMA Negeri 1 Banjarbaru. Validation was carried out by examining the suitability of the assessment

indicators with the competencies and techniques of the measured front rolling movements. Based on the validator's suggestion, improvements were made to several assessment indicators to better match the characteristics of the front rolling movement.

Furthermore, to minimize subjectivity in the assessment of motor skills, the assessment process is carried out by two assessors (*raters*), namely researchers and PJOK teachers. Before the research was carried out, the two assessors equalized perceptions of the assessment rubric and scoring criteria. The final score used is the result of the agreement of the two assessors, The results of the assessment of the two raters are then compared and discussed until an agreement on the final score is obtained. So that the consistency of the assessment can be better maintained.

The learning completeness criteria are determined based on the Minimum Completeness Criteria (KKM) of the PJOK subject of SMA Negeri 1 Banjarbaru, which is 80. Furthermore, the percentage of student learning completeness is calculated using the formula:

$$\boldsymbol{P = \frac{f}{N} \times 100\ \%}$$

Description:
*P* = percentage value of learning completeness
*F* = number of students who achieve learning completeness
*N* = the total number of students.

The indicator of the success of the action is determined if at least 75% of students achieve a score of ≥ 80 according to the KKM that applies at school. In addition, the success of the action was also characterized by an increase in class grades and student participation during the learning process.

The percentage of learning completeness obtained in each cycle is then interpreted using the Benchmark Reference Assessment (PAP) according to Winarno (2014:155) to determine the success rate of learning actions.

**Table 1.** Percentage Success Rate of Action

| Mastery Rate | Final Score | Classification |
|---|---|---|
| 90% - 100% | A or 4 | Excellent |
| 80% - 89% | B or 3 | Good |
| 65% - 79% | C or 2 | Enough |
| 55% - 65% | D or 1 | Less |
| Less than 55% | E or 0 | Very Less |

*Source*: Winarno, (2014:155)

## RESULTS AND DISCUSSION

### Results

As an initial stage in this classroom action research, the researcher first made initial observations to determine the learning conditions of PJOK, especially in the front roll floor gymnastics material in class X-9 of SMA Negeri 1 Banjarbaru. Initial observations were made to get an idea of students' ability to perform front roll movements and to find out the various obstacles that occurred during the learning process. The results of these initial observations are used as a basis for determining the actions that will be applied to the research process through the application of a cooperative learning model with the help of audiovisual media.

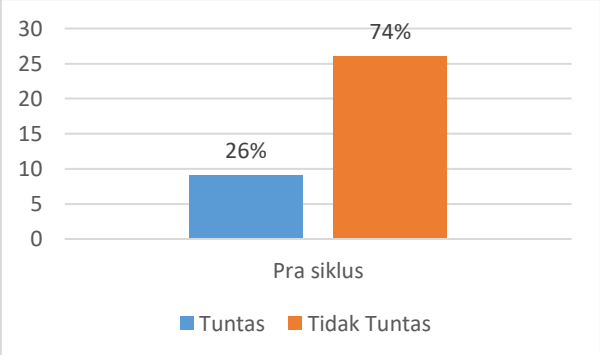


**Figure 1.** Average score of initial test results

Based on the results of the initial test, the average class score was 62 with a learning completeness rate of 26%. Of the 35 students who participated in the learning, as many as 9 students had reached the Minimum Completeness Criteria (KKM) of 80, while the other 26 students had not reached the completion of learning. The highest score obtained by students is 87 and the lowest score is 41.

**Table 2.** Pre-Cycle Value Distribution

| Category | Value Range | Frequency | Percentage |
|---|---|---|---|
| Very High | 88-100 | 0 | 0% |
| Height | 72-87 | 9 | 25,72% |
| Low | 56-71 | 10 | 28,57% |
| Very Low | 40-55 | 16 | 45,71% |

The distribution of grades in the pre-cycle stage shows that most students are still in the low and very low categories. A total of 16 students (45.71%) were in the very low category, 10 students (28.57%) were in the low category, and only 9 students (25.72%) were in the high category. There have not been any students who have reached the very high category. In addition, the results of the psychomotor domain assessment showed that students' skills in performing front roll movements were still low with an average score of 62. Based on the observations, mistakes that are often found include the position of the head that has not been attached to the chest when rolling, the rejection of the legs that are not strong, the position of the hands that are not appropriate when touching the mat, and the inability to maintain the position of the rounded body during the rolling process. In addition to technical factors, some students also look hesitant and lack courage when making movements, which affects the quality of the movements performed.

In Cycle I, learning is carried out through the application of a cooperative learning model assisted by audiovisual media. Students are divided into small, heterogeneous groups and given the opportunity to observe videos of the front rolling technique before practicing. Next, students discuss in groups and take turns doing exercises with observations from other group members.

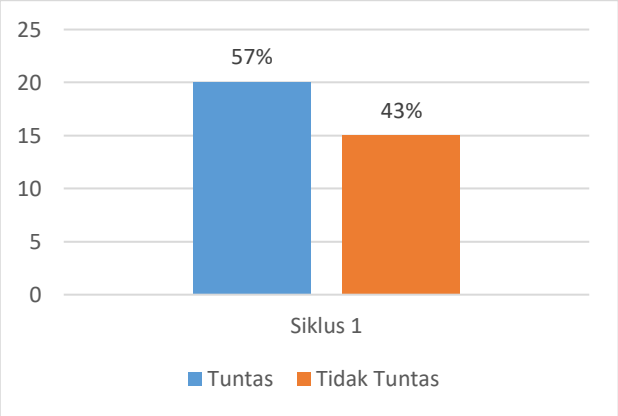


**Figure 2.** Cycle Value I

The results of the evaluation of Cycle I showed an increase in learning outcomes compared to the pre-cycle stage. The number of students who have achieved learning completeness has increased to 20 students, while the other 15 students have not reached completeness. The percentage of learning completeness increased to 57% with an average class score of 77. The highest score increased to 91 and the lowest score to 60.

**Table 3.** Cycle I Value Distribution

| Category | Value Range | Frequency | Percentage |
|---|---|---|---|
| Very High | 88-100 | 5 | 14,29% |
| Height | 72-87 | 21 | 60,00% |
| Low | 56-71 | 7 | 20,00% |
| Very Low | 40-55 | 0 | 0% |

The distribution of values in Cycle I also showed improvement. A total of 21 students (60.00%) are in the high category and 5 students (14.29%) have reached the very high

category. Meanwhile, the number of students in the low category decreased to 7 students (20.00%) and there were no more students in the very low category.

In the psychomotor realm, the average score increased to 80. This improvement shows that students are starting to be able to perform front rolls with better technique than in the pre-cycle stage. Based on the observation results, improvements can be seen in the students' ability to perform initial postures, put their heads towards the chest when rolling, and perform stronger leg pushes. In addition, students began to show a better understanding of the front roll technique after participating in cooperative learning assisted by audiovisual media.

However, the success indicator of the research has not been achieved because the percentage of learning completeness is still below the target of 75%. Some students still experience errors in head position, leg repulsion, and final movement posture. In addition, student involvement in peer observation activities is also not optimal because some students still tend to be passive observers.

Based on the results of the reflection of Cycle I, improvements were made in Cycle II. These improvements include providing clearer examples of movements through audiovisual media, increasing the intensity of teacher guidance during group activities, and implementing more structured *peer observation*. Each student not only observes the movements of their friends, but is also required to note the parts of the movement that still need to be improved to discuss with the group.

Through these activities, students become more active in the learning process because they not only practice, but also engage in observing, recording, and analyzing the mistakes of their groupmates' movements. Based on the results of observations during learning, students' participation in group discussions increases, students are more responsible for the tasks given, and are more active in providing feedback to friends during the exercise activities.

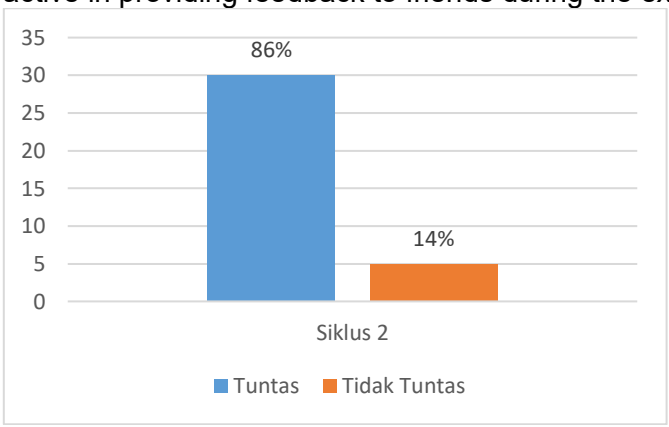


**Figure 3.** Cycle II Degrees

The results of the evaluation in Cycle II showed a better improvement than Cycle I. Of the 35 students, as many as 30 students have achieved learning completion, while 5 other students have not achieved completeness. The percentage of learning completeness increased to 86% with an average class score of 85. The highest score increases to 95 and the lowest score to 71.

**Table 4.** Cycle II Value Distribution

| Category | Value Range | Frequency | Percentage |
|---|---|---|---|
| Very High | 88-100 | 7 | 20,00% |
| Height | 72-87 | 27 | 77,14% |
| Low | 56-71 | 1 | 2,86% |
| Very Low | 40-55 | 0 | 0% |

The distribution of scores in Cycle II showed better results. A total of 27 students (77.14%) were in the high category and 7 students (20.00%) were in the very high category. Only 1 student (2.86%) is still in the low category and there are no students in the very low category.

In the psychomotor realm, the average score increased back to 82. This improvement shows that students' ability to perform the front rolling technique is getting better. Most students have been able to perform the initial posture correctly, put the head towards the chest

when rolling, perform optimal leg pushes, maintain a rounded body position during the movement, and perform the final posture more balanced.

**Table 5.** Learning Outcome Recapitulation

| Internships | Conclusion | Incomplete | Completeness | Average | Highest Score | Lowest Score |
|---|---|---|---|---|---|---|
| Pre-Cycle | 9 | 26 | 26% | 62 | 87,00 | 40,50 |
| Cycle I | 20 | 15 | 57% | 77 | 91,45 | 60,12 |
| Cycle II | 30 | 5 | 86% | 85 | 95,15 | 71,23 |

The data shows that student learning outcomes have increased gradually from pre-cycle to Cycle II. The average grade of the class increased from 62 to 77 and then increased again to 85. The percentage of learning completeness also increased from 26% to 57%, then reached 86% in Cycle II. Thus, the success indicators of the research have been achieved because more than 75% of students obtained scores according to the KKM that has been set.

**Discussion**

The results of the study showed that the application of a cooperative learning model assisted by audiovisual media supported the improvement of the learning outcomes of students in Class X-9 of SMA Negeri 1 Banjarbaru. The improvement can be seen from the increase in the class average score, the percentage of learning completeness, the distribution of scores, and the improvement of students' psychomotor skills in performing forward-roll movements. These findings are consistent with the results of the systematic review and meta-analysis conducted by Dudley et al. (2022), which showed that appropriately designed physical education interventions can positively influence students' psychomotor, cognitive, affective, and social learning outcomes.

The improvement in learning outcomes was presumably influenced by the combination of audiovisual media and cooperative learning. The use of audiovisual media helped students understand the stages of the movement more clearly. Through video demonstrations, students could repeatedly observe body position, hand placement, head movement, leg propulsion, body rotation, and the final stance. The visualization of these movements helped students develop a better understanding of the forward-roll technique so that movement errors could be reduced during practice. Through video demonstrations, students could observe each stage of the movement more clearly than through verbal explanations alone. This condition helped students understand the movement technique before directly performing it.

Video-based learning is relevant to motor-skill instruction because it provides concrete information about the sequence, timing, and technical components of a movement. Mödinger et al. (2022) explained that video-based visual feedback can enhance motor learning in physical education by enabling students to observe, analyze, and correct their performance. Visual information also allows students to compare their own movements with the expected movement model. In addition, Han et al. (2022) found that visual and corrective feedback positively contributes to motor-skill acquisition because it helps learners identify performance errors and make appropriate corrections during subsequent attempts.

The use of audiovisual media in this study did not merely make learning more attractive but also functioned as a movement model that could be repeatedly observed. Repeated observation can assist students in building a mental representation of the correct technique before physical execution. Wulf et al. (2010) stated that motor-skill learning is influenced by several factors, including demonstrations, feedback, attentional focus, practice conditions, and opportunities to correct movement errors. Therefore, the video demonstrations used in the present study may have supported students in understanding the forward-roll sequence and preparing themselves before direct practice.

The results of this study are in line with the research of Suwanto (2024), which found that the use of audiovisual media was able to improve the learning outcomes of basic badminton techniques. Student learning completeness increased from 24% in the pre-cycle to 44% in Cycle I and reached 87.5% in Cycle II. These findings show that audiovisual media can help students understand learning materials through clearer and more attractive visual presentations. A similar condition was found in this study, in which the forward-roll video helped students understand the stages of the movement so that their learning outcomes

increased in each cycle. The findings of Suwanto (2024) are also supported by Mödinger et al. (2022), who concluded that video-based visual feedback generally has a positive effect on motor-skill learning in physical education.

In addition, cooperative learning supported skill improvement because students had opportunities to observe one another and discuss the movement techniques performed. Through group interaction, students could compare the implementation of movements with the correct techniques so that mistakes in the initial, execution, and final stages of the movement were easier to recognize and correct. Interaction among group members also enabled students to receive social support that could reduce fear and hesitation when performing forward-roll movements.

The positive contribution of cooperative learning to physical education has been demonstrated in previous research. Boke et al. (2025) found through a meta-analysis that cooperative learning positively affects physical, cognitive, affective, and social learning outcomes in physical education. Cooperative learning allows students to participate actively, exchange information, provide assistance, and assume responsibility for both individual and group learning outcomes. Zach et al. (2023) also explained that cooperative learning in physical education encourages communication, collaboration, mutual support, shared problem-solving, and active participation in movement activities.

Interaction among group members may also help students overcome psychological barriers when performing the forward roll. Some students may experience fear because the movement requires them to bend their heads toward the chest, transfer body weight forward, and rotate the body on the mat. In a cooperative environment, students can observe their peers, receive encouragement, and practice in a more supportive atmosphere. Yang et al. (2021) found that cooperative learning can increase students' motivation and movement skills because it creates opportunities for active involvement, shared practice, and assistance among group members.

The application of peer observation in Cycle II also contributed to the improvement of forward-roll skills. The activity of observing and recording errors in classmates' movements made students better understand the technical components that had to be considered when performing the forward roll. When students identified mistakes in their classmates' movements, they also indirectly learned to recognize and correct errors in their own performance. This process made peer observation not merely a watching activity but also an analytical learning activity.

Peer observation enables students to compare observed performance with predetermined technical criteria. Bores-García et al. (2020) explained that peer assessment in physical education can increase students' awareness of learning criteria, expand the sources of feedback, and encourage students to identify performance problems and propose appropriate corrections. However, peer-assessment activities need to be supported by clear indicators, structured observation sheets, and teacher guidance so that the feedback provided by students is accurate and educationally meaningful.

In addition, skill improvement was influenced by exercises that were carried out repeatedly during the action process. Repetitive exercises provided students with opportunities to improve movement coordination, refine technical accuracy, and adjust their movements based on feedback obtained from teachers and peers. Through continuous practice, students became increasingly able to perform forward-roll movements according to the expected technique.

However, the improvement should not be attributed to repetition alone. Repeated exercises become more meaningful when accompanied by demonstrations, feedback, error correction, and reflection. Han et al. (2022) showed that feedback has an important role in motor-skill learning because it provides information about movement performance and directs students toward the aspects that require improvement. Similarly, Wulf et al. (2010) emphasized that motor learning develops through repeated practice supported by effective feedback, appropriate attentional focus, and opportunities to adjust subsequent movement attempts.

The findings of this study are supported by Mukarom et al. (2024), who showed that the application of the cooperative learning model was able to increase students' interest and motivation in floor-gymnastics learning. The study demonstrated an increase in movement

ability in each cycle until it reached a 100% success rate in Cycle III. The similarity with this study can be seen in the increase in student participation in group activities, which had an impact on improving forward-roll learning outcomes. The findings are also consistent with Yang et al. (2021), who reported that cooperative learning improves both movement-skill acquisition and learning motivation in physical education.

The greater increase in learning outcomes in Cycle II was presumably related to the application of more structured peer observation. In Cycle I, students only observed their classmates' movements in general, whereas in Cycle II, each student was required to record the parts of the movement that still needed improvement and then discuss them with the group. Observing, taking notes, and discussing errors in classmates' movements helped students increase their awareness of the technical aspects that had to be considered when performing the forward roll.

The use of structured peer observation allowed students to focus on specific performance criteria rather than making general judgments. Bores-García et al. (2020) stated that peer-assessment activities are more effective when students use clear rubrics and receive guidance regarding the aspects of performance that must be observed. Group discussions conducted after observation activities also strengthened students' understanding of correct movement techniques. This collaborative process is consistent with the characteristics of cooperative learning, which integrates discussion, shared responsibility, mutual assistance, and collective problem-solving (Boke et al., 2025; Zach et al., 2023).

The improvement in learning outcomes was not only seen in the students' final scores but also in the psychomotor skills directly related to the implementation of the forward-roll movement. The increase in psychomotor scores from 61.68 in the pre-cycle to 80.09 in Cycle I and 82.15 in Cycle II showed that the students experienced progress in mastering the movement technique. The improvement could be seen in the students' ability to perform the initial stance, place their hands correctly, bring the head toward the chest while rolling, perform leg propulsion more effectively, maintain a rounded body position during the movement, and perform the final stance in a more balanced manner.

These findings are consistent with Dudley et al. (2022), who found that physical education interventions tend to produce meaningful improvements in psychomotor outcomes when students are provided with active practice, appropriate instructional strategies, clear learning objectives, and relevant feedback. In the present study, audiovisual demonstrations, cooperative activities, peer observation, and repeated practice provided interconnected learning experiences that supported students' psychomotor development.

These findings are also in line with the research of Subaya et al. (2022), which showed that the application of the cooperative learning model in forward-roll learning was able to increase student learning completeness from 65% in Cycle I to 100% in Cycle II. The study concluded that cooperative learning supports the improvement of students' knowledge and skills through interaction and cooperation among students. The similarity between the findings indicates that cooperative learning is suitable for forward-roll instruction because students can learn through demonstrations, discussions, observations, feedback, and mutual assistance.

Based on the results of the study and supported by previous research, it can be understood that the increase in forward-roll learning outcomes was not influenced by only one factor but was the result of a combination of audiovisual media, cooperative learning, peer observation, feedback, and repetitive exercises. Audiovisual media helped students understand movement sequences and technical components more clearly (Mödinger et al., 2022; Suwanto, 2024). Cooperative learning provided social support, active participation, and opportunities for shared problem-solving (Boke et al., 2025; Mukarom et al., 2024; Yang et al., 2021; Zach et al., 2023). Peer observation and group discussion helped students identify and correct technical errors (Bores-García et al., 2020), while repeated exercises supported by feedback enabled students to improve movement coordination and performance accuracy (Han et al., 2022; Wulf et al., 2010).

Thus, the findings of this study show that the cooperative learning model assisted by audiovisual media supported the improvement of forward-roll learning outcomes among students in Class X-9 of SMA Negeri 1 Banjarbaru. The model combined visual demonstrations, physical practice, peer interaction, feedback, reflection, and correction in one learning process. This combination is consistent with the multidimensional nature of quality

physical education, which is expected to develop psychomotor, cognitive, affective, and social learning outcomes simultaneously (Dudley et al., 2022).

This research has several limitations. First, the research was conducted in only one class with a total of 35 students, so the results cannot be widely generalized to other classes, schools, or student populations. Second, the study used a classroom action research design without a control group, so it did not allow direct comparisons with other learning models. Third, the action was conducted in only two cycles, so it could not describe the long-term impact of implementing the learning model or the retention of the students' forward-roll skills.

Fourth, the assessment of movement skills still had the potential to contain an element of subjectivity even though a predetermined assessment rubric was used. Psychomotor assessment requires judgments regarding the accuracy, coordination, fluency, and balance of movements. Future studies can reduce this potential subjectivity by involving more than one assessor, calculating inter-rater agreement, recording student performance, and applying more detailed assessment indicators. Mödinger et al. (2022) indicated that video recordings can be used not only as instructional media but also as a means of repeatedly observing and evaluating movement performance.

In addition, the increase in learning outcomes may also have been influenced by repeated exercises during the study, increased familiarity with the task, teacher feedback, peer assistance, and students' motivation to improve their scores. Therefore, follow-up research with larger sample sizes, comparison groups, longer intervention periods, retention tests, and stronger experimental or quasi-experimental designs is needed to obtain more comprehensive evidence. Future studies should also examine the individual and combined effects of audiovisual media, cooperative learning, peer assessment, feedback, and repetitive practice on motor-skill learning in physical education.

## CONCLUSION

The application of the cooperative learning model assisted by audiovisual media showed an increase in the learning outcomes of front roll students in Class X-9 at SMA Negeri 1 Banjarbaru. The percentage of learning completeness increased from 26% in the pre-cycle to 57% in the first cycle and 86% in the second cycle, while the grade point average increased from 61 to 77 and 85. This improvement shows that movement demonstrations through audiovisual media, group work, peer observation, and corrective discussions can support students' technical understanding in doing front rolls. However, the study was limited to one class and did not involve a comparison group. Further research is recommended to use more standardized motor skills assessment instruments, engage more classes, as well as compare the effectiveness of this model with other learning approaches.

## RECOMMENDATIONS

The application of a cooperative learning model supported by audiovisual media can be an alternative approach in PJOK learning, especially in front roll materials, because it has been proven to increase student participation, collaboration, and learning achievement. Teachers are encouraged to continue to develop more varied learning activities and adjust teaching methods to suit the characteristics of students so that the learning process becomes more interesting, effective, and able to increase student learning motivation. Further research can develop this learning model on other floor gymnastics materials or by using different learning media so that more optimal results are obtained.

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