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The Effect of Cooperative Learning in College Basketball Education Learning Achievement and Motivation of Students

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Abstract

This study investigated and analyzed the influence of cooperative learning on students' learning performance and motivation in college basketball teaching, with the goal of breaking the rigidity and boredom of the traditional teaching mode of physical education and making the teaching mode of basketball course more diversified and scientific. Sixty college students enrolled in Physical Education basketball course were selected through purposive sampling. Thirty (30) students were assigned to experimental group (taught using traditional method) and the other 30 students were assigned to control group (taught using cooperative learning approach). A quasi-experimental, non-equivalent group design was used as the research design for this study. Both the Basketball Skills Achievement Test for evaluating learning achievement and Intrinsic Motivation Inventory for assessing perceived motivation were used before and after the intervention. Results showed that there are significant differences in academic performance and learning motivation between the control group and the experimental group after the intervention. Students who received traditional teaching methods have made slight but significant progress in two basketball skills and learning motivation, while the students who participated in cooperative learning have significantly improved in four basketball skills and learning motivation. Cooperative learning is more effective than traditional methods in learning achievement and learning motivation.

Keywords

Basketball; Cooperative Learning; Academic Achievement; Learning Motivation.

1. Introduction

All Cooperative learning is a creative and effective teaching theory and strategy that emerged in the United States in the early 1970s and made substantial progress in the mid-1970s to the mid-1980s. Because it was shown to improve the socio-psychological atmosphere in the classroom, enhance students' academic performance, and promote good non-cognitive qualities, cooperative learning soon attracted the world's attention. It ultimately became one of the contemporary mainstream teaching strategies and is described as "the most important and most successful teaching reform."

Cooperative learning is a structured, systematic learning strategy featuring a group of students with different abilities engaging in learning activities in a cooperative and mutual assistance way, jointly completing group learning goals, improving overall performance, and obtaining group rewards on the premise of promoting everyone's learning level. Due to the different ways of rewarding individuals for achieving their goals, there are also different interactions between individuals in achieving such goals. Doich divides these methods into three types: cooperative, competitive, and individualized.

The course teaching of the university directly affects the performance of the college students entering the society and plays a pivotal role in the students' careers. College physical education is a pivotal course to improve the physical quality of college students and cultivate sports spirit

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and sportsmanship. Among all college sports courses, basketball is one of the most loved. It draws the most significant number of participants in sports courses, and is one of the most played sports during students' free time. In short, basketball courses are vital in college physical sports courses.

College physical sports courses need to strengthen the teaching guidance for basketball courses, cultivate students' awareness of cooperation, and learn the teaching content of basketball courses with the correct concept of cooperation. Therefore, due attention must be given to the teaching of college courses, especially the teaching of college physical basketball. In the teaching process, in particular, due attention must be given to cultivating students' awareness of cooperation and improving cooperation ability. Both of these requirements will necessitate innovations in teaching methods and constant enhancements to the actual college physical education teaching system.

Basketball is the most popular course among students, so the teachers and leaders of the school also attach great importance to it. To this end, cooperative learning should not only teach students the cooperation skills in basketball; rather, the key is to help students establish a stable sense of cooperation. Therefore, cooperative learning is not only a kind of teaching content learning but also a kind of teaching method and teacher consciousness learning. Basketball itself is a team sport, and cooperation is a core aspect of and foundational to basketball. Cooperative learning is the basic content and a basic principle of college basketball sports course teaching in college sports basketball courses.

This subject was chosen to study because of the researcher's interest in basketball and because she is a basketball player who also wants to be a physical education teacher in the future. Her background from the primary school until she graduated from the university shaped her interest in improving her basketball education mode. As the researcher believed, this study will help make basketball education be more advanced, diversified, and effective, towards becoming more meaningful and effective.

2. Significance of the Study

This study will better understand the benefits and consequences of cooperative learning in basketball education. Specifically, itwill be of great value to the following persons, institutions, and agencies.

Teachers: Using the cooperative learning method in basketball teaching, teachers will realize the diversification of teaching classroom strategies and the changes in teaching concepts, hence leading to better teaching effect. However, in today's society, the popularity of cooperative learning is not high enough, and there are still many teachers who choose to use traditional teaching methods, boring personal action skills training, and unreasonable groupings.

Students: Exploring cooperative learning in basketball education to improve the existing basketball teaching mode will revamp the overall teaching level and promote the all-round development of students. When the dynamics of cooperative teaching method are applied, the students will then attain better learning outcomes and increase their physical skills and social skills through collaboration. In a way, therefore, cooperative learning can not only expand the students' horizons, but also tap into their potential abilities, such as obedience, leadership, organizational, independent learning, and imagination abilities.

Schools: This research will provide insights for educational leaders on how to optimize teaching time through cooperative learning. It will open up the cooperative learning method to optimize basketball education through the involvement of teachers and students, letting the students understand their own advantages and cooperate and assist others, as soon as possible to achieve the fastest and best way to complete the goal of this popular team sport.

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Coaches: In the classroom environment of cooperative learning mode, coaches no longer need a lot of repeated lectures and demonstration actions but let students explore, cooperate, communicate and actively acquire knowledge and skills. Coaches only need to plan the course arrangement and guide the course, which greatly reduces the workload and energy consumption of coaches in the course. However, relatively, coaches need to master more knowledge of course planning and design, as well as guiding ability and practical experience. If they master these, coaches will easily complete a course in class, and students will gain more from it.

Athletes: Cooperative learning mode can develop athletes' broader abilities and strengths, such as leadership, obedience, communication and cooperation, because cooperative learning mode has changed the training mode that is once single and solidified, thus developing more positive abilities of athletes, cultivating different types of athletes, and developing in all directions according to each athlete's personality and characteristics. Moreover, the personal development trend of these athletes is not arranged by coaches, but students themselves find the role of the most suitable sports in cooperative learning.

Physical education curriculum developers: The curriculum development of cooperative learning mode is different from traditional educations' single form of thinking. The previous curriculum development is very easy to make, and curriculum developers feel boring because the content is immutable. There are no challenges and breakthroughs, while the curriculum development of cooperative learning has more divergent thinking, not only to let students learn technical movements, but also to let students learn to think in learning, as well as to communicate and cooperate. If this is done well, curriculum developers will gain a stronger sense of achievement, and their social status will be improved accordingly.

3. Scope and Delimitations of the Study

The research looked into the effect of cooperative learning on students' learning achievement and motivation in college PE. It explored whether there is a positive effect on teaching basketball education using cooperative learning compared to the traditional method. The study is quasi-experimental research involving control and experimental groups with 30 students in each group. The study was conducted in a PE basketball class in 2021 in Hunan Vocational and Technical College of Mechanical and Electrical Engineering in Changsha, Hunan Province, China. The study covered only the following topics: dribbling, shooting, passing, and the three steps up to the basket. The learning achievement of the students before and after the intervention was limited to their performance in the basketball skills achievement test. The motivation, on the other hand, was determined using an adapted questionnaire. Therefore, the measure of motivation was more generic and not very specific to the basketball lessons being taught.

4. Sampling Method

The research employed purposive sampling. Students who met the criteria were included in the study. Primarily, the students should be newly enrolled at college level for the year 2021. In order to prevent unexpected situations and students' physical health during the course of the experiment, some students with major physical or psychological defects were excluded from the experiment. It was also made sure that the number of students and physical health of the control and experimental classes were relatively consistent to ensure the experimental data's credibility and accuracy. Also considered were students who have not participated in the basketball course prior as they have the same starting point in the college basketball education section. Such a case, both theory and practice were still not imparted, so to a certain extent they would not interfere with the fairness of the research data and experiment. Likewise, students who had background in sports were not included in the study.

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The students who met the inclusion criteria were assigned to the experimental (cooperative learning) and control group (traditional learning) based on the convenience of the students. Each group was composed of 30 students. The control group was taught using the traditional teaching method, and the experimental group was taught using the cooperative learning method. The two groups of subjects were evaluated in terms of learning achievement and motivation.

Table 1. Affiliation of Respondent

College	Control	Experimental
School Information Engineering	8	4
School of Electrical Engineering	9	10
School of Economics and Trade	7	7
College of Humanities	4	3
School of Medical Engineering	2	6
Total	30	30

As shown in table 1, the control and experimental groups were composed of 30 students each. A big majority of the students (71.7%) from both groups belong to 15-20 years old, and the rest of the students (28.3%) were above 20 years old. All the students were males, and come from different colleges. In terms of affiliation, the students in the two groups are quite diverse, with no school or college having the majority.

4.1. Research Instruments

In this study, three instruments were used: (1) a researcher-made demographic profile questionnaire that assessed the age, sex, and year level of the college students; (2) the basketball skills achievement test for evaluating students' learning achievement in basketball education; and (3) the Post-Experimental Intrinsic Motivation Inventory.

Basketball skill achievement test has always been a way to test the skills of basketball players. Its main purpose is to test the skill mastery of basketball players and improve the training plan of basketball players according to the test results. The basketball skill achievement test used in this study is mainly to test the mastery of basketball skills of the two groups of athletes to better analyze the differences of various data between the two groups of athletes.

The Intrinsic Motivation Inventory (IMI) is a multidimensional measurement tool intended to assess participants' subjective experience of a target activity. The instrument assessed the participants' interest/enjoyment, perceived competence, effort, value/usefulness, pressure and tension, and perceived choice while performing a given activity, thus yielding six subscale scores.

4.2. Data Gathering Procedure

The researcher sought the approval of the school prior to the conduct of the study. The participating students were identified using a set of criteria mentioned in the sampling procedure, and their informed consent forms were secured. The students were assigned to the control and experimental groups based on their convenience. Before the actual instructions started, the two groups were given the basketball skills test to measure their baseline learning. The survey on motivation was also administered.

The instruction for both groups lasted for eight weeks. The control group was taught using the traditional method. In this method, the teacher mainly relied on lectures and demonstrations to teach the skills in basketball. On the other hand, the experimental group was taught using cooperative learning. In this approach, students learned the different skills of working with

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others. Tasks were given to students that required them to learn with partners and in teams. Table 2 shows the topics covered and the cooperative learning modules used.

After the instructions, both groups took the basketball skills achievement test. They were also given the survey on motivation.

Table 2. Contents of Cooperative Learning Method in Basketball

Week	Course Content	Definition Content
1	Mobilology	Step by step emergency stop, jump by step emergency stop
2	Ball handling technology module	Turn and dribble, dribble and stop suddenly
3	Transfer and receiving technology module	Pass the ball with both hands on the chest-push a pass
4	Shooting technology module	One-handed shoulder shooting and jumping shooting
5	Ball-holding breakthrough technology module	Cross step breakthrough, ipsilateral technology step-breakthrough
6	Defensive technology module	Defending players with and without the ball
7	Rebound technology module	Grab offensive and defensive rebounds
8	Basic tactical coordination	Transmission and cover cooperation

4.3. Data Analysis

The results of the survey were interpreted using the means computed. The mean for each item in the survey and the overall mean were interpreted using the scale shown in table 3. Since there were negative statements in the survey questionnaire, the assignment of scores for these items was actually reversed. These items were also given a different interpretation for their means.

Table 3. Verbal Interpretation of Means in the Motivation Survey

Mean Range	Interpretation Positive Items	Interpretation Negative Items	Overall Mean Interpretation
5.51 - 7.00	Very true	Very false	Highly motivated
2.51 - 5.50	Somewhat true	Somewhatfalse	Fairly motivated
1.00 – 2.50	Not at all true	True	Not motivated

In the basketball skills achievement test, the students were scored 1, 2, or3 points depending on their performance of certain tasks. A score of 3 was given to students who were able to do the assigned tasks with mastery, 2 points for those who struggled a bit but still managed to finish the task, and 1 point for those who were not able to complete the task. To give the reader a better understanding of how the groups performed, the students were categorized based on their scores. Those who got perfect scores were considered proficient, those who got 2 points were considered competent, and those who got 1 point were considered lacking competence. The means in the achievement test were also given interpretations so that the groups could be described easily in relation to the skills they were tested. The scale below was used.

Mean	Interpretation
2.51 - 3.00	Proficient
1.51 - 2.50	Competent
1.00 - 1.50	Lacks Competence

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In testing the differences between mean scores and motivations within groups and between groups, the t-test for dependent means and t-test for independent means were used. The decision criteria of $\alpha = 0.05$ was used for determining significant differences, and a p-value of less than the set decision criteria was being considered significant.

5. Results, Analysis and Interpretation of Data

5.1. Learning Achievement in Basketball Skills before Intervention

Before the instruction in both groups started, the students were asked to perform a set of basketball skills: dribbling, shooting, passing, and three -step ups the basket. This was to determine the pre-instruction skills of the students in both groups. The students' performance was rated with a score of 3, 2, or 1, corresponding with the skills of proficient, competent, and lacks skills, respectively. Consequently, students' performance were categorized into proficient (P), competent (C), and lacks competence (LC) to organize and compute the group's overall skills. To capture the performance of the groups, the means of the individual skills were computed and interpreted. The results of the skills test are shown in tables 4 and 5.

Table 4 shows the performance of the control group in the different skills test.

Table 4. Learning Achievement of Control Group Before Intervention

Skills	P	C	LC	Mean	Interpretation
Roundtrip dribbling	0	14	16	1.47	Lacks Competence
One minute shot	0	9	21	1.30	Lacks Competence
Passing in pairs	0	10	20	1.33	Lacks Competence
Three steps up the basket	0	14	16	1.47	Lacks Competence
Overall Mean				1.39	Lacks Competence

As shown in the table 4, the mean for the dribbling skill is 1.47, which is interpreted as lacks competence. The group as a whole is described as lacking competence in dribbling. This is quite obvious with 16 students or majority of the group were considered as lacking competence in roundtrip dribbling. On the other hand, 14 students were competent, but no one was considered proficient in dribbling.

When it comes to shooting in a time of one minute, the mean is 1.30 which means that the group also lacked competence in shooting. Twenty-one (21) students lacked competence in the said skill, 14 students were competent, and again no one was considered competent.

In terms of passing the basketball in pairs, the mean is 1.33 which is interpreted as lack of competence. It can be seen that most of the students (20) lacked the competence, 10 students were considered competent, and no one was proficient.

In the last skill, a three step up the basket, the group performed dismally with a mean of 1.47. This mean value shows that the group lacks competence in the mentioned skill. Again, it is quite obvious that most of the students (16) lacked competence in this skill, 14 students were considered competent, but none was rated as proficient.

In the combined basketball skills, the overall mean of the group is 1.39 which means the group lacked competence in the covered set of skills. This is understandable because the group had yet to undergo instructions in basketball.

Table 5 shows the experimental group's performance in the test skills before the intervention. In roundtrip dribbling, the mean score is 1.57, which shows that the group was competent in the dribbling category. However, it can be seen that half of the students were lacking competence in the mentioned skill.

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Table 5. Learning Achievement of Experimental Group Before Intervention

Skills	P	C	LC	Mean	Interpretation
Round trip dribbling	2	13	15	1.57	Competent
One minute shot	0	6	24	1.20	Lacks Competence
Passing in pairs	2	9	20	1.37	Lacks Competence
Three steps up the basket	1	12	17	1.47	Lacks Competence
Overall Mean				1.40	Lacks Competence

In shooting, the group's mean score is lowest with a mean value of 1.20. This is quite evident with majority of the students (24) were considered lacking competence. Somehow, sixstudents who were considered as competent. As for why the six students performed better before cooperative learning, we learned from the follow-up interview that they usually showed great interest in basketball. According to them, these six students frequently took the time to train by themselves to improve their basketball skills. No one was able to show proficient shooting.

In passing in pairs, one student was proficient, nine were competent, but the majority (20) were considered as lacking in competence. The mean score of 1.37 describes the group as lacking competence in passing in pairs.

In terms of three steps up the basket, the group has a mean of 1.47 which implies that the group lacked competence in the said skill. This is actually clear from the number of students under each skills category. Seventeen (17) or majority of the students lacked competence, while 12 were considered competent. One student was actually proficient in the three steps up the basket. When the skills are considered as a whole, the group's mean score is 1.40, indicating lack of competence among the students. This was expected because the students were yet to undergo instruction in basketball.

5.2. Learning Motivation before Intervention

The results of the surveys on motivation before instruction of both groups are presented in tables 6 and 7. As shown in table 6, the control group has an overall mean of 3.40. This means that the group is fairly motivated. The group registered the highest means in items 24 and 20 with the values of 5.03 and 5.13, respectively. According to the students, these items were negative statements, and the means indicate that they are somewhat false. It means that the students really had a choice and performed the activity willingly. The lowest means were that of items 25 and 2, with values of 2.43 and 2.50, respectively. The students said that it is not true that they had a choice about doing the activity. The students did not believe as well to item 25 which says that they would be willing to do the activity again because it has some value for them. The latter findings actually contradict the items about choice given the highest rating by the students. This is actually possible and it hints that the group is actually split over the issue of having a choice or not on their activity in PE.

The fair level of motivation of the group may be explained by the fact that most did not perform well in the basketball skills test. Since they did not know yet how to dribble, shoot, pass; it was normal that their frustrations would somehow reflect in their motivation.

registered an overall mean of 3.13 which means they were fairly motivated. The group gave the highest means to items 24, 20 and 14. These items were negative statements referring to the students having no choice in relation to the activity.

In short, the students did not believe that they had no choice when it came to the activity in PE. On the other hand, the items with lowest means are items 7 and 6 with 2.43 and 2.47, respectively. The mean values show that students did not believe the importance of the activity to their improvement and that they did not enjoy the activity. These responses are actually

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normal from the group because most of them did not know the basketball skills yet, and they struggled to perform the skills test. Thus their motivation was not high.

Table 6. Learning Motivation of Control Group Before Traditional Instruction

Items	Mean	Interpretation
1. I believe that doing this activity could be of some value for me	2.70	somewhat true
2. I believe I have some choice about doing this activity	2.50	not at all true
3. While I was doing this activity, I was thinking about how much I enjoyed it	2.77	somewhat true
4. I believed that doing this activity is useful for improved concentration	2.63	somewhat true
5. This activity was fun to do	2.60	somewhat true
6. I think this activity is important for my improvement	2.53	somewhat true
7. I enjoyed doing this activity very much	2.67	somewhat true
8. I really did not have much choice about this activity	4.23	somewhat false
9. I did this activity because I wanted to	3.07	somewhat true
10. I think this is an important activity	3.12	somewhat true
11. I felt like I was enjoying this activity while I was doing it	2.60	somewhat true
12. I thought this was a very boring activity	4.13	somewhat false
13. It is possible that this activity could improve my studying habits	2.67	somewhat true
14. I felt like I had no choice but to do this activity	4.03	somewhat false
15. I thought this was a very interesting activity	3.27	somewhat true
16. I am very willing to do this activity again because I think it is somewhat useful	2.83	somewhat true
17. I would describe this activity as very enjoyable	3.23	somewhat true
18. I felt like I had to do this activity	2.97	somewhat true
19. I believe that doing this activity could be beneficial to me	2.87	somewhat true
20. I did this activity because I had to	5.13	somewhat false
21. I believe doing this activity could help me do better in school	3.30	somewhat true
22. While doing this activity I felt like I had a choice	3.10	somewhat true
23. I would describe this activity as very fun	2.67	somewhat true
24. I felt it was not my own choice to do this activity	5.03	somewhat false
25. I would be willing to do this activity again because It has some value for me	2.43	somewhat true
Overall Mean	3.17	not at all true

Table 7. Learning Motivation of Experimental Group Before Intervention

Items	Mean	Interpretation
1. I believe that doing this activity could be of some value for me	2.83	somewhat true
2. I believe I have some choice about doing this activity	2.60	somewhat true
3. While I was doing this activity, I was thinking about how much I enjoyed it	2.60	somewhat true
4. I believed that doing this activity is useful for improved concentration	2.53	somewhat true
5. This activity was fun to do	2.57	somewhat true
6. I think this activity is important for my improvement	2.47	not at all true
7. I enjoyed doing this activity very much	2.43	not at all true
8. I really did not have much choice about this activity	3.93	somewhat false
9. I did this activity because I wanted to	2.93	somewhat true
10. I think this is an important activity	2.87	somewhat true
11. I felt like I was enjoying this activity while I was doing it	2.87	somewhat true
12. I thought this was a very boring activity	3.97	somewhat false
13. It is possible that this activity could improve my studying habits	2.77	somewhat true
14. I felt like I had no choice but to do this activity	4.20	somewhat false
15. I thought this was a very interesting activity	3.20	somewhat true
16. I am very willing to do this activity again because I think it is somewhat useful	2.57	somewhat true
17. I would describe this activity as very enjoyable	2.93	somewhat true
18. I felt like I had to do this activity	3.20	somewhat true
19. I believe that doing this activity could be beneficial to me	3.20	somewhat true

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20. I did this activity because I had to	4.90	somewhat false
21. I believe doing this activity could help me do better in school	2.90	somewhat true
22. While doing this activity I felt like I had a choice	2.97	somewhat true
23. I would describe this activity as very fun	2.73	somewhat true
24. I felt it was not my own choice to do this activity	5.53	not at all true
25. I would be willing to do this activity again because It has some value for me	2.50	not at all true
Overall Mean	3.13	fairly motivated

5.3. Learning Achievement in Basketball Skills after Intervention

Table 8. Learning Achievement of Control Group after Intervention

Skills	P	C	LC	Mean	Interpretation
Roundtrip dribbling	1	14	15	1.53	Competent
One minute shot	0	17	13	1.57	Competent
Passing in pairs	5	17	8	1.90	Competent
Three steps up the basket	3	15	12	1.70	Competent
Overall Mean				1.68	Competent

The control group was taught using the traditional teaching in basketball. After the instruction, the group was subjected to the basketball skills test once more. The result of the test is shown in table 8. As shown, the mean score of the control group in dribbling is 1.53 which means the group is already competent in the said skill. There was one student who was proficient already, 14 were competent, and 15 remained lacking in competence.

In shooting, the mean score is 1.57 which means that the group is already competent. This is supported by the fact that in the categorization there are now more competent students (17) than those who lacked competence (13). However, none was considered proficient in shooting. The mean in passing in pairs is the highest with a value of 1.90. In this skill, 5 students were proficient, 17 were competent, and only 8 students remained lacking in competence. The group registered a mean of 1.70 in the three steps up the basket. Here, 3 students were considered proficient, 15 were competent, while 12 remained lacking competence.

The overall mean score for the four basketball skills is 1.68, which reflects the learning achievement of the group. This also means that the control group is now competent in the basketball skills. This can be seen as the learning achievement of the group. It can be seen that the control group using the traditional basketball teaching method has less help in improving basketball skills. According to the test of different basketball skills, the traditional teaching method requires teamwork skills, and more students master these skills. Some individuals' skills are not as good as those of the team. Therefore, it can be seen that even if the traditional teaching method is adopted, it also highlights the learning achievements of team cooperation and emphasizes the importance of cooperative learning.

Table 9. Learning Achievement of Experimental Group after Intervention

Skills	P	C	LC	Mean	Interpretation
Roundtrip dribbling	21	9	0	2.70	Proficien
One minute shot	22	8	0	2.73	Proficien
Passing in pairs	21	9	0	2.70	Proficien
Three steps up the basket	25	5	0	2.83	Proficien
Overall Mean				2.74	Proficien

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After being taught using cooperative learning, the experimental group was also subjected to the basketball skills test. The students were scored in roundtrip dribbling, one minute shot, passing in pairs, and three steps up the basket. The results of the test is shown in table 9.

The experimental group performed well in every skill. In dribbling its mean score is 2.70, which shows that the group was proficient. It can be seen also in the skills category that 21 students were proficient, 9 were competent and no one was left with inadequate skills.

In shooting the mean is 2.73, indicating proficiency in the said skills. Here, 22 students were proficient, 8 were competent, and no one was lacking in competence. In the third skill, the group registered a mean of 2.70 which means that the group was proficient in shooting. Twenty-one (21) students were considered proficient in passing while 9 were competent. No one was considered lacking in competence.

The last skill got the highest mean with 2.83. It means that the group was proficient in the three steps up the basket. In this skill, 25 were rated as proficient and 5 competent. Again no one was considered lacking in competence. The overall mean of the group is 2.74. This is the group's learning achievement which is characterized now as proficient.

5.4. Learning Motivation after Intervention

Table 10. Learning Motivation of Control Group after Intervention

Items	Mean	Interpretation
1. I believe that doing this activity could be of some value for me	3.40	somewhat true
2. I believe I have some choice about doing this activity	2.93	somewhat true
3. While I was doing this activity, I was thinking about how much I enjoyed it	3.17	somewhat true
4. I believed that doing this activity is useful for improved concentration	2.80	somewhat true
5. This activity was fun to do	2.67	somewhat true
6. I think this activity is important for my improvement	3.13	somewhat true
7. I enjoyed doing this activity very much	2.60	somewhat true
8. I really did not have much choice about this activity	4.13	somewhat false
9. I did this activity because I wanted to	2.93	somewhat true
10. I think this is an important activity	3.53	somewhat true
11. I felt like I was enjoying this activity while I was doing it	3.20	somewhat true
12. I thought this was a very boring activity	4.16	somewhat false
13. It is possible that this activity could improve my studying habits	2.97	somewhat true
14. I felt like I had no choice but to do this activity	4.17	somewhat false
15. I thought this was a very interesting activity	3.45	somewhat true
16. I am very willing to do this activity again because I think it is somewhat useful	3.43	somewhat true
17. I would describe this activity as very enjoyable	2.97	somewhat true
18. I felt like I had to do this activity	3.76	somewhat true
19. I believe that doing this activity could be beneficial to me	3.26	somewhat true
20. I did this activity because I had to	4.76	somewhat false
21. I believe doing this activity could help me do better in school	3.20	somewhat true
22. While doing this activity I felt like I had a choice	3.17	somewhat true
23. I would describe this activity as very fun	3.30	somewhat true
24. I felt it was not my own choice to do this activity	5.03	somewhat false
25. I would be willing to do this activity again because It has some value for me	2.77	somewhat true
Overall Mean	3.40	fairly motivated

After the traditional teaching, the survey on motivation was also administered to the control group. The results are shown in table 10. The group's mean score is 3.40, which is interpreted as fairly motivated. Items 24 and 20 got the highest mean with 5.03 and 5.76, respectively.

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These items convey that the students have no choice in their activity. The students' responses implied that these were somewhat false. The lowest means were given to items 5 and 7 with respective values of 2.67 and 2.60. These items say that doing the activity was fun and that they enjoyed it. Although the mean values are still considered somewhat true, their values are almost borderline to being interpreted as not true at all.

Table 11. Learning Motivation of Experimental Group After Intervention

Items	Mean	Interpretation
1. I believe that doing this activity could be of some value for me	6.73	very true
2. I believe I have some choice about doing this activity	6.67	very true
3. While I was doing this activity, I was thinking about how much I enjoyed it	6.20	very true
4. I believed that doing this activity is useful for improved concentration	5.77	very true
5. This activity was fun to do	5.63	very true
6. I think this activity is important for my improvement	6.34	very true
7. I enjoyed doing this activity very much	6.43	very true
8. I really did not have much choice about this activity	3.87	somewhat false
9. I did this activity because I wanted to	6.73	very true
10. I think this is an important activity	6.23	very true
11. I felt like I was enjoying this activity while I was doing it	6.10	very true
12. I thought this was a very boring activity	3.38	somewhat false
13. It is possible that this activity could improve my studying habits	6.78	very true
14. I felt like I had no choice but to do this activity	3.90	somewhat false
15. I thought this was a very interesting activity	6.50	very true
16. I am very willing to do this activity again because I think it is somewhat useful	6.07	very true
17. I would describe this activity as very enjoyable	6.33	very true
18. I felt like I had to do this activity	6.30	very true
19. I believe that doing this activity could be beneficial to me	6.33	very true
20. I did this activity because I had to	2.03	true
21. I believe doing this activity could help me do better in school	5.97	very true
22. While doing this activity I felt like I had a choice	5.90	very true
23. I would describe this activity as very fun	5.97	very true
24. I felt it was not my own choice to do this activity	1.97	very true
25. I would be willing to do this activity again because It has some value for me	5.40	somewhat true
Overall Mean	5.60	highly motivated

Since the survey was done after the traditional instruction, it can be considered that the students' experience learning basketball during the eight week was already factored in how they assessed their motivation. The improvement of motivation is not only produced in practice in class and data collection after class this semester but also reflected in the promotion brought by the presentation of results. For example, in the traditional teaching, although individuals have improved their skill levels, the top students are always in the position of receiving rewards and praise. Although the students with poor levels have been affirmed due to their progress, their quantitative scores are usually not high, and their achievement motivation is affected.

The quantitative evaluation of the cooperation group is based on the ranking of the group results. Due to the equal level of the group, regardless of the individual level, the possibility of success is equal, which is greater than that of the backward students in the control group. When they reach the ideal goal, their achievement motivation is something that some students in the control group have never experienced, so as to enhance their learning enthusiasm and internal motivation and improve their learning motivation. Therefore, the experimental results can be

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described as follows: in the general basketball course of physical education, the cooperative learning teaching method has a significant positive impact on improving students' learning motivation. Compared with the traditional general teaching method, the teaching effect is significantly different.

The motivation of the experimental group after the intervention is shown in table 11. The overall mean of the motivation is 5.60, which indicates that the group is highly motivated. The items with the highest means are 1, 9 and 13 with values of 6.73, 6.73 and 6.78, respectively. These items imply that students considered the activity could be of some value to them that they really wanted to do it, and it could possibly improve their study habits. The lowest means were obtained by items 24 and 20, with values 1.97 and 2.03, respectively. These items say that the students performed the activities because they had to, and it was not their own choice to do it. It could be possible that the students' responses to these items are actually pointing out to the nature of the cooperative learning where students work together. Since decisions in cooperative learning are done collectively, then an individual student would think that he or she had a limited say over the tasks being done. It is also common in collaborative learning that certain tasks are being delegated to an individual, and therefore one would feel obligated to do something.

5.5. Comparison between Learning Achievements before Intervention

Table 12. T-test on the Difference between Learning Achievements before Intervention

	Mean	Diff	Tv	P value	Interpretation
Control Group	1.39	0.01	-0.01	0.92	not significant
Experimental Group	1.40				

The control and experimental groups both exhibited a low performance on the basketball skills test before intervention. The control group registered a mean of 1.39, while the experimental group had a mean of 1.40. To test whether there is a significant difference between the means of the two groups, a t-test for independent means was used. As seen in table 12, the t value is -0.01 and the computed p is 0.92. This means that there is no significant difference between the means of the groups at 0.05 level of significance. The two groups were comparable in terms of their baseline learning in basketball.

5.6. Comparison of Learning Motivation before Intervention

Table 13. T-test on the Difference between Learning Motivations before Intervention

	Mean	Diff	Tv	P value	Interpretation
Control Group	3.17	0.04	0.18	0.43	not significant
Experimental Group	3.13				

T-test for independent means was run on the means of the motivation of the experimental and control groups as well. This is to determine whether the mean of 3.17 for the control group and the mean of 3.13 for the experimental group are statistically different. As seen in table 13, the t-value is 0.18, and the p value is 0.43. This shows that the mean score of the control group score is not significantly higher than the experimental group. This means that the two groups are comparable in terms of learning motivation.

Considering the non-significant t-test results for both learning achievements and learning motivations, it can be claimed that the experimental groups are comparable in baseline learning and learning motivation.

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