



Application of Activity Learning Method (ALM) to Improve Basketball Dribbling Skills

Zumrudatul Alwiyah¹, Afifan Yulfadinata²

Universitas Negeri Surabaya, Jawa Timur, 60213, Indonesia

Abstract

This study aims to analyze the effectiveness of the Activity Learning Method (ALM) to improve the basketball dribbling skills of MTsn 2 Sidoarjo students. Initial observations show that most students have difficulty in dribbling due to lack of variety and have not fully implemented structured motor activities. This study uses a quasi-experiment using a one group pretest posttest model involving 32 students in grade IX h who were selected using the purposive sampling technique. Over the course of six weeks, students participate in a series of hands-on experiential learning activities that emphasize repetitive practice and optimal physical engagement. The results of this study show a significant increase in dribbling ability. It is marked by an increase in the average score from 39.58 in the pretest to 66.25 in the posttest (P-value, 0.000). Further analysis showed that the speed indicator and the number of errors had changed significantly, while ball control showed no significant improvement. These findings confirm that ALM is able to have a positive impact on the development of dribbling skills through a systematic, participatory, and activity-centered approach to students. Thus, this method can be used as an effective learning alternative in the development of basic basketball skills in the madrasah environment.

Keywords: *Activity Learning Method, Dribbling Skills, Basketball*

Correspondence author: Zumrudatul Alwiyah¹, Universitas Negeri Surabaya, Jawa Timur, Indonesia.
Email: zumrudatul.23139@mhs.unesa.ac.id



Jurnal Pendidikan Física (JPJ) is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/).

INTRODUCTION

Physical education, sports, and health (PJOK) is an important component of education. PJOK also helps students develop physically, motorly, and emotionally. PJOK plays a very important role in supporting the growth and development of students because through increasing physical activity and developing basic movements, as well as having a positive impact on physical, cognitive, mental and emotional aspects (Rahmawati et al., 2024). Therefore, PJOK learning not only trains movement skills, but also builds a healthy personality, perspective, and lifestyle. Play activities can also make learning fun and meaningful, which makes it important (Tandiola et al., 2024). This shows that an activity-based learning model can significantly increase students' motivation, engagement, and motor skills (Gusril et al., 2022). Motor development in the PJOK curriculum plays a vital role because it serves as a foundation for mastering more complex sports. Through programmed physical activity,

students learn to coordinate their movements, improve balance, strength, and hand-eye coordination.(Candra et al., 2025). One of the sports that really needs this ability is basketball

Basketball is a game that uses a large ball and is played by two teams with five players on each team with the aim of putting the ball into the opponent's basket (Mahfud et al., 2022). A basic technique in basketball that is mandatory is dribbling (Selan et al., 2023). Dribbling is a complex motor skill that requires coordination, balance, agility, and ball control abilities in dynamic game situations(Andre et al., 2025). Dribbling ability is also affected by hand eye coordination and body agility (Saputra et al., 2023). Dribbling is also the most important part of basic basketball techniques because mastering basketball techniques plays a role in increasing the effectiveness and efficiency of players' movements during the game (Saputro, 2022). Therefore, a learning approach is needed that is able to facilitate optimal dribbling mastery, and in accordance with the needs of students' motor development.

Previous research shows that the implementation of PJOK in schools still often faces a number of obstacles, especially low motivation and student participation (Shah Bachran et al., 2022). To answer these challenges, the Activity Learning Method (ALM) is present as a relevant and potential approach. ALM is one of the relevant approaches to overcome these problems. ALM that emphasizes students' active involvement through direct activities, physical practices, discussions, cooperation and reflection. This method has been shown to increase learning motivation, physical fitness, and student participation in PJOK learning (Yulfadinata et al., 2025).

In the previous study, it provided an overview of effective learning strategies to improve dribbling skills. Findings from research conducted at MTs Al-Muttaqin Pekanbaru show that a variety of practice methods are able to improve students' dribbling techniques gradually. Through the use of more interesting and structured forms of exercise, students become more motivated, less easily saturated, and able to understand dribbling techniques better. The study confirms that learning strategies that are structured with movement variations can create a more effective learning atmosphere and have a direct impact on improving dribbling skills from one cycle to the next (Febi & Putri, 2023). The findings only focus on game variations and modified exercises and have not applied systematic active learning models such as the Activity Learning Method. With these conditions, there is still an opportunity to research a learning approach that is not only fun, but also able to improve dribbling skills through more targeted learning activities and directly involving students.

This situation also has a direct impact on the optimal achievement of basic sports skills, including dribbling skills in basketball games, the results of initial observations at MTsN 2

Sidoarjo show that basketball learning has not been running optimally. Low motivation and also student participation, and many students also have difficulty in doing basketball dribbling movements. The lack of variety of learning models as well as less contextual approaches also contribute to students' low basic skills. This condition emphasizes the need to implement a learning model that is not only fun but can also be able to systematically improve motor skills.

This study aims to analyze how effective the activity learning method (ALM) is in improving the dribbling ability of MTsN 2 Sidoarjo students. However, this study regarding the application of ALM to improve specific motor skills, especially basketball dribbling, is still limited and has not been widely done in the context of madrasas. His novelty research lies in the application of the Activity Learning Method (ALM) directly to develop dribbling skills in the context of basketball learning in madrasas, different from the previous ones that focused on modified games or fitness aspects. Theoretically, this study enriches the literature on experiential active learning models in PJOK. Practically, this study provides recommendations to PJOK teachers to implement more innovative, participatory, and effective learning approaches in improving students' motor skills.

METHOD

This study uses a quasi-experimental approach with a one group pretest posttest design. Quasi-experiment is a study that is used to assess the influence of a treatment under conditions that remain controlled, the goal of finding a more systematic cause-and-effect relationship. (Muhandis & Riyadi, 2023). The design of this research is One Group Pretest–Posttest Design, which is a pre-experimental design that involves only one group of research subjects. Participants were given a pretest to find out the initial condition before the intervention, then received treatment, and then underwent a posttest to see the changes that appeared after the intervention was given. Thus, this design allows researchers to assess the effectiveness of a program or intervention medium by comparing scores before and after treatment, even without a control group (Wamena et al., 2024). This design was chosen to determine the changes in students' dribbling skills before and after being treated through the Activity Learning Method (ALM) learning method. With the end of the final test to see the changes that occur after treatment.

This research was carried out at MTsN 2 Sidoarjo. This research process lasted for 6 weeks. A time allocation of 2x40 minutes for each meeting from October 30 to November 24, 2025, the entire data collection process is carried out during PJOK Learning.

The Purposive Sampling technique is a sample selection procedure that is carried out deliberately by taking into account certain characteristics that are relevant to the purpose of the research. This technique is used to ensure that the selected sample really has the quality of information needed so that it can increase the expertise and credibility of research findings (Leah, 2024).

The population of this study is grade IX students of MTsN 2 Sidoarjo. The sample of this study was 32 students in grade IX H. The selection of samples was carried out using the Purposive Sampling Technique carried out by sports teachers at MTsn 2 Sidoarjo, because all students of grade IX H are qualified as active participants and the number of the population includes small categories so that the whole can be used as a sample.

The data measurement technique is carried out through a basketball dribbling test which is used to measure students' motor skills. This test consists of three main indicators, namely: (1) dribbling speed measured based on track travel time; (2) ball control which is assessed through observation sheets; and (3) the number of errors such as missing the ball, touching the obstacles, or going out of the dribbling lane. The three indicators are used as the basis for assessing dribbling ability, and in statistical analysis in addition to the value of dribbling skills, each indicator is tested separately according to the data obtained.

The initial stage of analysis began using pspp 1.6.2 using the Shapiro–Wilk normality test because the number in the sample was less than 50 students. For the hypothesis test used depending on the distribution of data, if normal use a paired t-test (Paired Sample t-test), but if it is not normal, use a non-parametric Wilcoxon Signed Rank Test. A follow-up analysis of the dribbling skill component was carried out with *Chi-Square*. All tests were carried out with a significance level of $p < 0.05$, so the treatment was considered to have a significant effect if the p value was below this limit.

RESULTS AND DISCUSSION

Results

Table 1. Distribution of dribbling skills

Variable	N	Mean	Median	Std. Deviation	Minimum	Maximum
Pre-VALUE	32	39,5833	40,0000	12,43622	20,00	66,67
PostVALUE	32	66,2500	63,3333	15,32796	33,33	100,00

In table 1, it shows that the value of students' dribbling skills in the pretest and posttest. In the pretest stage, the average score was 39.58 with a median of 40.00. The students' scores seemed quite diverse, as seen from the standard deviation of 12.44, while the lowest score was 20.00 and the highest was 66.67. From this data, it can be seen that the average value of dribbling skills is increased.

Table 2. Normality Test Results

Variable	N	K-S Statistics	Sig
Pre-VALUE	32	0,955	0,193
PostVALUE	32	0,965	0,364

Table 2 shows that the Shapiro–Wilk normality test was carried out because the sample count was less than 50. The test results showed that both data groups had significance values of 0.193 (pretest) and 0.364 (posttest), respectively. Both values are greater than $p > 0.05$, so the data is normally distributed and the analysis is continued using the paired sample t-test.

Table 3. Table 3 T Pair Test

Variable	N	Mean	Std. Deviation	Mean Difference	T	Pvalue
Pre-VALUE	32	39,5833	12,43622	26,66667	-11,904	0,000
PostVALUE	32	66,2500	15,32796			

Test results *Paired Sample T-Test* indicates that there is a significant difference between the pretest and posttest scores. The mean difference value was -26.67 , with a value of $t = -11.904$ and a $p\text{-value} = 0.000$ ($p < 0.05$). These findings confirm that the Activity Learning Method (ALM) has a significant influence on improving students' dribbling skills.

Table 4. Chi-Square

Variable	f	Pretest %	f	Posttest %	Chi-Square	P-value
Speed						
Medium-Fine	3	9,4%	15	46,9%	11,130a	0,001
Less Than once	29	90,6%	17	53,1%		
Basketball controls						
Very Well	13	40,6%	20	62,5%	3,630a	0,163
keep	10	31,3%	8	25,0%		
Less Than once	9	28,1%	4	12,5%		
Error						
Very good	0	0,0%	11	34,4%	45,844a	0,000
Good	0	0,0%	7	21,9%		
Enough	3	9,4%	11	34,4%		
Less	8	25,0%	3	9,4%		
Less than once	21	65,6%	0	0,0%		

P. there table 4 Chi-square analysis shows changes in students' dribbling ability after implementation *Activity Learning Method* (ALM) is different in each indicator. The first is the speed indicator, the speed indicator has a fairly clear increase, where the number of students in the medium to very good category increased from 3 students (9.4%) to 15 students (46.9%), while the less category decreased from 29 students (90.6%) to 17 students (53.1%). A p-value of 0.001, which is well below the 0.05 limit, indicates that this change is significant, so the increase in dribbling speed can be said to be a result of the treatment given.

For basketball control indicators. The number of students in the very good category increased from 13 students (40.6%) to 20 students (62.5%), and the poor category decreased from 9 students (28.1%) to 4 students (12.5%). However, a p-value of 0.163, which is higher than 0.05, suggests that this increase has not been significant, so the changes that appear are not strong enough to be considered a direct influence of the treatment.

And in the dribbling error indicator, it has the most prominent change Before treatment, most students were in the category of less than 21 students (65.6%), but after treatment there were no more students in that category. On the other hand, the number of students in the very good category increased to 11 students (34.4%), the good category to 7 students (21.9%), and the fair category to 11 students (34.4%). A p-value of 0.000, which is much smaller than 0.05, suggests that the decrease in the number of errors is significant. Overall, the p-value results show that ALM learning has a significant effect mainly on improving speed and reducing dribbling errors, while improvements in ball control are still insignificant.

Discussion

The results of the research that have been presented in the previous section show that students' dribbling skills have improved after participating in learning using *the Activity Learning Method* (ALM). The data that has been processed shows an increase in the average score from the pretest and posttest, as well as changes in the ability category that can be seen through the chi-Square analysis, especially in the speed and error indicators. In the speed indicator, the number of students in the medium-very good category increased quite largely, while the number of students in the less category decreased. This also happens in the error indicator, where the number of student errors that were initially in the category of less once decreased drastically after treatment. These findings show that most students experience positive development in the aspects of dribbling speed and accuracy, although the improvement in the control indicator has not shown significant changes.

These changes can be explained through the characteristics of ALM which places students as the center of learning activities. Models can stimulate gross motor skills, train concentration, and help children think, make decisions, and act quickly during physical activity (Puspitasari et al., 2023). This kind of activity speeds up coordination response, improves movement concentration, and reduces errors because students get direct feedback during the Exercise (Dermawan et al., 2024). This is in line with the intensively focused training that is able to improve performance abilities and capacity. This kind of exercise plays an important role in optimizing the motor learning process, because starting repetitive practice the nervous system adapts faster and basic skills develop conditions Exercises that demand acceleration of movement and quick response also support student performance on speed indicators (Syati et al., 2024). Meanwhile, the ball control indicator does not show significant changes because this skill requires precision, consistency, and hand-eye coordination, which can develop more slowly than the aspects of speed and accuracy

The results of this study are in accordance with the findings (Febi & Putri, 2023) which explains that the variation of effective training methods improves the quality of dribbling motion. Improved student performance also supports opinions (Yulfadinata et al., 2025) that active learning is able to increase students' participation and physical ability in PJOK. In addition, the reduction in the number of errors after treatment is in line with the view (Saputra et al., 2023) says that dribbling coordination and control skills will develop rapidly when students engage in repetitive situational exercises. However, the findings on ball control that have not shown significant improvement provide an additional contribution, namely that not all aspects of motor skills improve at the same pace, and that some skills require a higher duration of training as well as intensity. Thus, this study not only reinforces the results of previous research, but also provides a new picture of how ALM works in improving dribbling skills in madrasah environments.

CONCLUSION

The results of the study show that *the Activity Learning Method (AL kM)* is very effective in improving basketball shooting skills, as well as significant changes in speed indicators and a decrease in the number of errors, confirming that structured and experience-based learning activities are able to systematically strengthen students' motor skills. These findings confirm that Al Mbisa can be a relevant and effective learning approach in the development of basic skills, especially basketball dribbling.

ACKNOWLEDGMENT

I would like to express my gratitude to MTsN 2 Sidoarjo who has given permission and full support so that the data collection process in this study can run well. I would also like to express my gratitude to Dr. Afifan Yulfadinata, S.Pd., M.Pd as a supervisor who has provided valuable direction, guidance, and input during the process of preparing this research. I would also like to express my gratitude to Prof. Dr. Drs. Abdul Rachman Syam Tuasikal, M. Pd., and Mr. Fuad Noor Heza, S.Pd., M.Kes. for the advice, assistance, and support provided, especially in the development and implementation of basketball learning treatments. I would like to express my gratitude to Mr. Junaidi Budi Prihanto, S.KM., M.KM., Ph.D. who has helped and guided me from the preparation to the data processing process so that this research can be completed properly. I hope that the results of this research can provide benefits for the development of PJOK learning, become a reference for future researchers, and contribute positively to improving students' skills in the future.

REFERENCES

- Andre, M., Salas, M., Agus, I. P., Hita, D., Bagus, I., & Jaya, G. (2025). *The Effect of Dribble Practice on Ball Control Ability in Beginner Basketball Players: A Literature Study Review*. 736–741.
- Candra, O., Parulian, T., Yolanda, F., Novrandani, S., Vryzas, D., Riau, U. I., Physical, K., Sports, P., Physical, K., & Sports, P. (2025). *Holistic by Integrating Physical Condition Exercises, Psychology*. 5(1), 782–792.
- Dermawan, I. A., Prawira, A. Y., Faridatul, A., & Maya, D. T. (2024). *SPRINTER : Journal of Sports Science The Effect of Informative Feedback on Freestyle Swimming Speed at D' Nurs Swimming School, East Jakarta City*. 5(1), 1–5.
- Febi, N., & Putri, D. (2023). *The application of methods varies in improving basketball dribble skills at MTs Al-Muttaqin Pekanbaru*. 2(3), 521–529.
- Gusril, Rasyid, W., Komaini, A., Chaeroni, A., & Kalsum, U. (2022). The Effect of Physical Activity-Based Physical Education Learning Model in the Form of Games. *International Journal of Human Movement and Sports Sciences*, 10(5), 906–912. <https://doi.org/10.13189/saj.2022.100506>
- Leah, N. (2024). *Types of Purposive Sampling Techniques with Their Examples and Application in Qualitative Research Studies*. 5(1), 90–99.
- Mahfud, I., Yuliandra, R., Gumantan, A., Sport, P., Teknokrat, U., Ratu, L., & Bandar, K. (2022). *Basketball Shooting Practice Model With Hoop Modification In School-Age Children*. 2(1), 49–56.
- Muhandis, M. A. Al, & Riyadi, A. (2023). *Analysis of the effectiveness of the Customer First*

Quality First Approach in the training quality dojo with the quasi-experimental method of one group pretest posttest design. pp. 7(02), 98–106.

- Puspitasari, D., Christina, S., & Hartati, Y. (2023). *SPRINTER: Journal of Sports Science Improves Learning Outcomes of Basic Motor Movements through the Application of a Play Approach. 4(2), 100–106.*
- Rahmawati, K. A., Nurlia, R., Oktavia, R., Noor, V., Ihsani, A., & Hafiza, N. D. (2024). The Role Of Physical Education, Sports, And Health In Character Formation And Movement Development And Elementary School Children. *Indo-MathEdu Intellectuals Journal, 5(3), 2741–2749.*
- Saputra, E., Suryadi, D., Samodra, Y. T. J., Dewintha, R., Suganda, M. A., Syam, A., Mashud, & Wati, I. D. P. (2023). Eye-hand coordination with basketball dribbling skills: Does it have a relationship? *Physical Culture, Recreation and Rehabilitation, 2(1), 10–17.* <https://doi.org/10.15561/physcult.2023.0102>
- Saputro, A. A. (2022). *Basic Basketball Technique Ability For Physical Education Students Stkip Pgri. 74–78.*
- Selan, M., Baun, A., Prima, C., Rajagukguk, M., Riwu, I., Kristen, U., Wacana, A., & Timur, N. T. (2023). *Indonesian Journal of Sports and Health (JOKI) available online at <https://jurnal.stokbinaguna.ac.id/index.php/jok> PROFILE OF BASIC BASKETBALL ENGINEERING SKILLS STUDENTS. Also Read: 3, 74–82.*
- Syah Bachran, A., Fattah, □, Nursandi, D., Hidayat, R., Santoso, R. H., & Julianti, E. (2022). *Problems Of Physical Education Teachers; Why Do Students Not Like Physical Education Classes? Article History. 1–5.* <https://doi.org/10.21009/jpja.v5i01.54965>
- Syati, G. L., Nasuka, & Akhiruyanto, A. (2024). Development Of Speed, Agility, Quickness (Saq) Training Models To Increase The Agility Of Junior Tennis Athletes. *Sports Tracks, 7(2), 762–768.*
- Tandiola, R., Ruben, S. D., Sawamanay, M., Suabey, S., Rophi, K. H., & Muspitha, F. D. (2024). Effectiveness Of Health Education On Nursing Students' Knowledge About Hiv/Aids In Wamena: A Study With A Pretest-Posttest Design In One Group Of Effectiveness Of Health Education On Nursing Students' Knowledge About Hiv/Aids In Wamena: A. *Papuan Tropical Nursing Journal, 7(2), 281–288.*
- Wamena, K., HIV, T., Research, A., Design, D., HIV, A., In, A., & Design, W. A. O. P. (2024). *Pretest-Posttest In One Group Effectiveness Of Health Education On Nursing Students' Knowledge. 07.*
- Yulfadinata, A., Muhammad, H. N., Ayubi, N., Arif, M., & Ardha, A. (2025). *The Effect of Active Learning Method on Students' Physical Fitness in Physical Education and Fitness Lectures. 3(1), 83–86.*