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The Effect of Ball-Handling Training on the Dribbling Skills of Basketball Extracurricular Students

Ahmad Taufiq Reza Kusuma[1], Herman Tarigan[2], Joan Siswoyo[3], Surisman[4]
[1,2,3,4] Pendidikan Jasmani, Universitas Lampung, Prof. Dr. Ir Sumantri Brojonegoro Street No. 1, Lampung, 35141, Indonesia

Abstract

This study aims to determine the effect of ball handling training methods on basketball dribbling skills in extracurricular basketball students at SMP Negeri 9 Bandar Lampung. The research method used in this study is a comparative experiment. The sample used was 30 students who took part in extracurricular basketball at SMP Negeri 9 Bandar Lampung. The research instrument was a dribble test and measurement using the Johnson Basketball Test. The results showed that in the Experimental Group (ball control) that the T_{value} = 12.076> T_{table} = 2.145, this means that there is a significant difference in the pre-test and post-test data). And in the Control Group that the T_{value} = 1.871 <T_{table} = 2.145, this means that there is no significant difference in the pre-test and post-test data. in the pre-test of the Experimental Group (ball handling) and the control that the T_{value} = 0.0731 < T_{table} = 2.048, this means that there is no significant difference in the pre-test data of the Experimental Group (ball handling) and the control. And in the post-test of the Experimental Group (ball handling) and the control that the T_{value} = 2.1950 > T_{table} = 2.048, this means that there is a significant difference in the post-test data of the Experimental Group (ball handling) and the control. It can be explained that there is a significant difference between the Ball handling Exercise and the control group on the ability to dribble the ball.

Keywords: *Ball Handling, Dribble, Dribble Test.*

Correspondence author: Ahmad Taufiq Reza Kusuma, Universitas Lampung, Indonesia.
Email: ahmadtaufiqreza@gmail.com

INTRODUCTION

Physical education (PE) plays a vital role in fostering holistic development by integrating physical, cognitive, emotional, and social aspects of student growth. Regular physical activity not only improves physical fitness such as cardiovascular endurance, muscular strength, flexibility, and stamina but also enhances mental health, self-confidence, motivation, and social behavior (Singh et al., 2019; Eime et al., 2022). During the formative years, simultaneous physical and mental development is essential to support children's emotional and social well-being. As such, PE serves as a comprehensive educational medium that nurtures the psychomotor, cognitive, and affective domains (Sodikun, 2002).

In Indonesia, the implementation of the Merdeka Curriculum through Ministry of Education and Culture Regulation No. 12 of 2024 introduces a student-centered approach that provides learners with more time to master concepts and strengthen their competencies. This curriculum emphasizes the integration of various approaches and strategies in PE, tailored to students' characteristics and learning environments. Schools also offer extracurricular sports programs that enable students to pursue their interests and talents, contributing to their achievements in local, national, and even international competitions (PB Perbasi, 2006).

Basketball, as one of the most popular sports among Indonesian students, offers significant physical, mental, and social benefits. PERBASI (2014) states that basketball is a game played with a ball that can be pushed, tapped with the palm, thrown, caught, and dribbled in all directions across the court. Mastery of basic basketball techniques including dribbling, passing, and shooting is critical for optimal performance (Wissel & Hall, 2000). Dribbling, in particular, plays a central role in maintaining ball control and maneuverability during games. Ahmadi (2007) states dribbling is the act of moving the ball in any direction in accordance with the rules of the game. A player may take multiple steps as long as the ball is bounced to the floor using one hand, and this can be done while stationary, walking, or running. After mastering the basics of play, technical skills such as dribbling become essential for enhancing player performance and tactical ability. Efficient dribbling requires precise technique and consistent practice to achieve effective and energy-efficient movements (Sodikun, 2002).

In fact, observations at SMP Negeri 9 Bandar Lampung revealed that many students in the basketball extracurricular program struggle with dribbling. Common problems include losing control of the ball and poor coordination, which may result from a lack of targeted and effective training methods. According to Prusak (2007), ball-handling training involves a series of movements that focus on developing tactile sensitivity and control through repetitive contact between the ball and the palm. These exercises are designed to enhance the player's ability to manage and manipulate the ball under various conditions. When practiced consistently and with variation, ball-handling drills significantly contribute to the improvement of dribbling skills. He also points out that ball handling develops players' ability to control the ball using both hands through varied and repetitive drills. Similarly, Subagyo (2022) highlighted that targeted dribbling drills, including ball handling, enhance players' agility, coordination, and speed.

Empirical research has demonstrated that ball-handling training is an effective method for improving dribbling skills. Rury (2020) found a significant effect of ball handling exercises on dribbling performance among extracurricular basketball students at SMA YADIKA Lubuk

Linggau, with t-test results (t-value = 6 > t-table = 1.76) confirming strong statistical significance. Likewise, Fredi (2022) demonstrated that ball handling training improved dribbling by 41.89% among students at SMA N 1 Karangnongko, outperforming alternative training methods. In another study, Raihan (2020) reported significant improvements in dribbling times among basketball extracurricular participants at SMA Negeri 5 Soppeng after undergoing ball handling training, with pre-test and post-test results showing a notable reduction in dribbling time ($p < 0.05$).

Despite these previous studies, similar issues persist among students in SMP Negeri 9 Bandar Lampung, where observations indicate low levels of dribbling proficiency due to ineffective practice routines. Given the potential of ball handling drills to address these issues, this study aims to investigate the effect of ball handling exercises on improving the dribbling skills of students in the basketball extracurricular program at SMP Negeri 9 Bandar Lampung.

METHOD

This study employed a comparative experimental method to examine the effect of ball-handling training on students' dribbling skills in a basketball extracurricular program. The population consisted of 30 students, all of whom were included as the research sample since the total number was fewer than 100. The research design followed a pre-test and post-test structure, where all participants initially completed a dribbling skills test to establish baseline data. The students were then divided into experimental and control groups using ordinal pairing based on their pre-test scores to ensure balanced group composition. The experimental group received ball-handling training over 16 sessions conducted three times per week, while the control group did not receive any treatment. The ball-handling training administered in this study consisted of a series of progressive drills aimed at improving coordination, control, and bilateral hand use. These included Tap Drill, Neck Circles, Waist Circles, Leg Circles, Figure-8 Dribble, and Low Control Dribble. Each session combined these drills in varied sequences to ensure motor learning through repetition and adaptation.

At the end of the treatment period, both groups took a post-test to measure changes in dribbling performance. Data were collected using the Johnson Basketball Test, which has a reliability coefficient of 0.80 and a validity coefficient of 0.79. The data were analyzed using descriptive statistics, normality and homogeneity tests, and an independent t-test to determine whether significant differences existed between the two groups.

RESULTS AND DISCUSSION

Results

This experimental study examined the effect of ball-handling training on students' dribbling skills in a basketball extracurricular program. A pre-test was conducted to assess initial skills and divide participants into experimental and control groups. The experimental group **received** ball-handling training, while the control group received no treatment. In the final stage, a post-test was conducted to evaluate improvements in dribbling skills. To provide a comprehensive overview of the data distribution, descriptive analyses were performed, including the calculation of the mean, standard deviation, median, mode, maximum, and minimum values. The results of the pre-test and post-test for the experimental group are presented as follows.

1. Pre-Test and Post-Test Results of the Experimental Group

Based on the pre-test and post-test results of dribbling skills in students who received ball-handling training, the findings are presented as follows:

Table 1. Descriptive Statistics of the Experimental Group

Data	Pre Test	Post Test
Mean	14,07	19,07
Median	14	19
Modus	15	16
Std.Deviation	2,63	3,86
Minimun	10	14
Maximum	19	25

The table 1 shows that the mean pre-test score for dribbling in the experimental group was 14.07, with a standard deviation of 2.63, a median of 14, a mode of 15, a maximum score of 19, and a minimum score of 10. After receiving the ball-handling training, the post-test results revealed an increased mean score of 19.07, with a standard deviation of 3.86, a median of 19, a mode of 16, a maximum score of 25, and a minimum score of 14.The comparison between the pre-test and post-test dribbling skills can be illustrated in the diagram below.

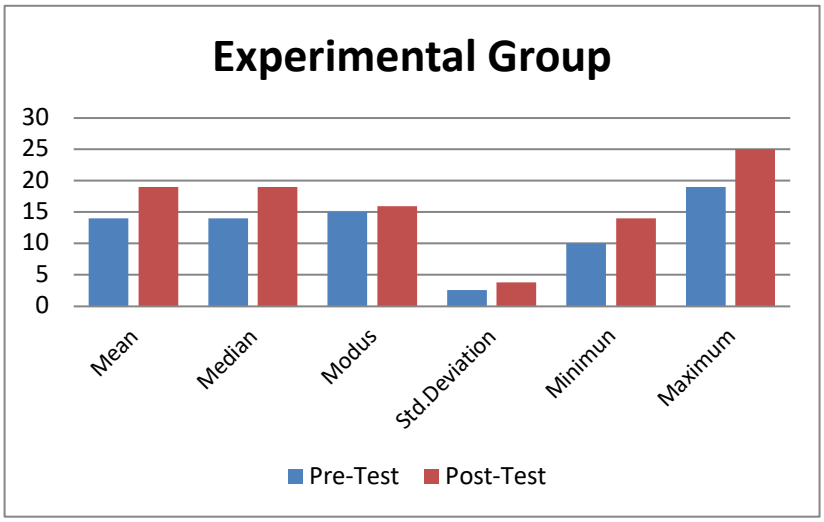

Figure 1. Bar Chart of Pre-Test and Post-Test Results of the Ball Handling Group

2. Pre-Test and Post-Test Results of the Control Group

Based on the pre-test and post-test results of dribbling skills in the control group (without treatment), the findings are presented as follows:

Table 2. Descriptive Statistics of the Control Group

Data	Pre Test	Post Test
Mean	13,93	14,27
Median	14	14
Modus	14	15
Std.Deviation	2,43	2,81
Minimun	10	10
Maximum	18	19

The table 2 shows that the mean pre-test score for dribbling in the control group was 13.93, with a standard deviation of 2.43, a median of 14, a mode of 14, a maximum score of 18, and a minimum score of 10. Meanwhile, the post-test dribbling results for the control group had a mean score of 14.33, a standard deviation of 2.81, a median of 14, a mode of 15, a maximum score of 19, and a minimum score of 10. Thus, the comparison between the pre-test and post-test dribbling skills can be illustrated in the diagram below.

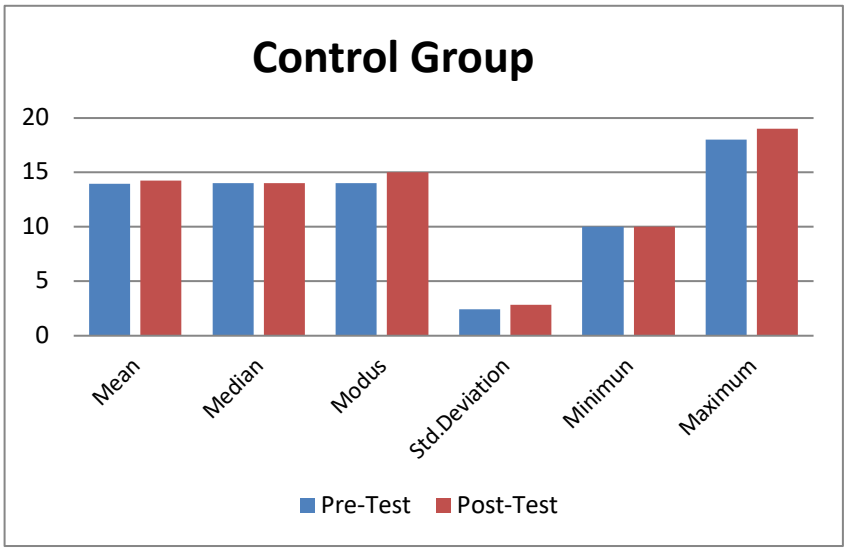

Figure 2. Bar Chart of Pre-Test and Post-Test Results of the Control Group

3. Hypothesis Testing Results

The data analysis to test the research hypothesis was conducted using a T-test as follows:

a). Paired Samples T-Test

The pre-test and post-test data of the experimental group were analyzed to determine whether ball handling training had a significant effect on improving basketball dribbling skills among students in the Basketball Extracurricular Program at SMP Negeri 9 Bandar Lampung. The results of the hypothesis testing for the experimental and control groups are presented in Table 8.

Table 3. Paired Samples T-Test Results for Experimental and Control Groups

Groups	T-Value	T-Table	Conclusion
Experimental (Ball Handling)	12.076	2.145	Significant Effect
Control Group	1.871	2.145	No Significant Effect

As shown in the table 3, the experimental group (ball handling) produced a T-value of 12.076, which is greater than the T-table value of 2.145. This indicates a significant difference between the pre-test and post-test scores in the experimental group, meaning that ball handling training had a significant effect. In contrast, the control group's T-value was 1.871, which is less than the T-table value of 2.145. This suggests no significant difference between the pre-test and post-test scores in the control group. Therefore, it can be concluded that ball handling training effectively improved the dribbling skills of students in the Basketball Extracurricular Program at SMP Negeri 9 Bandar Lampung.

b). Independent Samples T-Test

The pre-test and post-test data from the experimental group (ball handling training) and the control group were analyzed to determine whether there was a significant difference in the improvement of basketball dribbling skills among students participating in the Basketball Extracurricular Program at SMP Negeri 9 Bandar Lampung. The hypothesis testing results for the pre-test and post-test scores are presented in Table 4.

Table 4. Independent Samples T-Test Results

Data	T -Value	T -Table	Conclusion
Pre-Test *Ball handling* and control	0,0731	2,048	No Significant Difference
Post-Test *Ball handling* and control	2,1950	2,048	Significant Difference

As shown in the table 4, the pre-test comparison between the experimental group (ball handling) and the control group resulted in a T-value of 0.0731, which is less than the T-table value of 2.048. This indicates that there was no significant difference between the two groups in the pre-test scores. However, the post-test comparison showed a T-value of 2.1950, which exceeds the T-table value of 2.048. This finding suggests a significant difference between the experimental group (ball handling) and the control group in the post-test scores. Therefore, it can be concluded that ball handling training had a significant effect on improving the dribbling skills of students in the Basketball Extracurricular Program at SMP Negeri 9 Bandar Lampung.

Discussion

Based on the results of this study, students in the experimental group who received ball-handling training showed significant improvement in their dribbling skills. A pre-test was first conducted, after which participants were ranked and divided into two groups using ordinal pairing. The experimental group then underwent a systematic and well-structured ball-handling training program for seven weeks, with three sessions each week. This training structure aligns with Jakobsen et al. (2021), who emphasized that regular, periodized training sessions are essential for enhancing motor learning and athletic performance in youth. In contrast, the control group did not receive any intervention during the study period.

Ball-handling training, which forms the foundation of effective dribbling (Raihan, 2021), was specifically designed to help students improve ball control, efficiency, and strength during dribbling movements. The observed improvements in the experimental group were influenced by several key factors, including the intensity and variation of drills, optimal use of practice time, high levels of motivation, and access to adequate training facilities. These findings are supported by Burgess et al. (2020), who note that structured training environments characterized by repeated practice, immediate feedback, and progressive complexity yield greater improvements in young athletes. Moreover, the application of progressive overload, by gradually increasing task difficulty, facilitated ongoing neuromuscular adaptation and helped avoid performance plateaus (Singh et al., 2019).

In contrast, the control group, which received no specific training, showed no significant improvement in dribbling performance. This lack of progress underscores the necessity of guided and purposeful practice. Without structured intervention, students are unlikely to develop the technical precision and decision-making speed required for effective dribbling, as highlighted by Eime et al. (2022), who found that unstructured physical activity alone does not result in measurable skill development. Additionally, the structured training environment fostered student motivation and engagement—factors crucial to motor learning. As Ziv and Lidor (2016) explain, when students observe their own progress, they are more likely to invest effort and maintain focus during practice. The combination of repeated practice, cognitive involvement, and progressive challenge created optimal conditions for the acquisition of dribbling skills.

Therefore, these results indicate that ball-handling training is an effective approach to improving dribbling skills in basketball extracurricular programs and may serve as a valuable reference for coaches seeking to enhance players' technical performance.

CONCLUSION

This study concludes that ball-handling training significantly improves the dribbling skills of students participating in basketball extracurricular programs. In contrast, no significant improvement was observed in the control group that did not receive treatment. Furthermore, there was a clear and significant difference between the treatment group and the control group, indicating that ball-handling exercises effectively enhance students' dribbling performance. For future research, it is recommended that subsequent studies expand the sample size, extend the research duration, include additional independent variables beyond the control group, and

explore more diverse variations of ball-handling training methods. Coaches are encouraged to apply varied training materials and teaching methods to produce more substantial improvements in students' dribbling skills. Finally, students are advised to continue practicing and refining their dribbling techniques to achieve higher levels of performance.

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REFERENCES

Ahmadi, N. (2007). *Dasar-dasar permainan bola basket*. Jakarta: Depdiknas.

Burgess, D. J., Naughton, G. A., & Norton, K. I. (2020). Quantifying the impact of ball-handling drills on basketball skill development. *Journal of Sports Sciences, 38*(1), 12–20.

Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2022). A systematic review of the psychological and social benefits of sport participation in youth. *BMC Public Health, 22*(1), 1–12.

Fredi, Y. (2022). The effect of ball handling and beranting training on dribbling skills of basketball extracurricular students at SMA N 1 Karangnongko. *Journal of Physical Education Research, 10*(2), 45–52.

Jakobsen, M. D., Sundstrup, E., & Krustrup, P. (2021). The health benefits of recreational basketball: A systematic review. *Scandinavian Journal of Medicine & Science in Sports, 31*(5), 937–949.

Ministry of Education and Culture. (2024). *Implementation of the Merdeka Curriculum* (Regulation No. 12). Ministry of Education and Culture.

PB Perbasi. (2006). *Modul pelatihan dasar bola basket*. PB Perbasi.

PERBASI. (2014). *Peraturan dan teknik dasar bola basket*. Pengurus Besar Persatuan Bola Basket Seluruh Indonesia.

Prusak, K. A. (2007). *Fundamentals of ball handling in basketball*. McGraw-Hill.

Raihan, A. J. (2020). The influence of ball handling training on the dribbling skills of basketball extracurricular participants at SMA Negeri 5 Soppeng. *Indonesian Journal of Sports Science, 5*(1), 13–19.

Rury, R. (2020). The effect of ball handling exercises on dribbling ability of extracurricular basketball students at SMA YADIKA Lubuk Linggau. *Journal of Physical Education and Sports, 4*(3), 100–108.

Singh, A., Saliasi, E., Van den Berg, V., Uijtdewilligen, L., & Chinapaw, M. J. M. (2019). Physical activity and performance at school: A systematic review of the literature. *Preventive Medicine Reports, 13*, 281–291.

Sodikun, I. (2002). *Efisiensi gerak dalam olahraga*. Depdiknas.

Subagyo. (2022). Improving dribbling skills in basketball through targeted ball-handling drills. *Physical Education and Sports Pedagogy, 15*(4), 87–93.

Wissel, H., & Hall, G. (2000). *Basketball: Steps to success*. Human Kinetics.

Ziv, G., & Lidor, R. (2016). Vertical jump in female and male basketball players—A review of observational and experimental studies. *Journal of Science and Medicine in Sport, 19*(5), 385–392.