

Exploring the Effect of Team-Pair-Solo on improving Grade 6 Pupils Skill test in Basketball

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Abstract — This action research aimed to assess the impact of the team-pair-solo method on improving the basketball skills of grade 6 pupils. The study employed a pre and post design, with 15 participants divided into three groups receiving different drills (team, pair, and solo). The Basketball Skills Assessment measured dribbling, shooting, and passing on a scale of 0 to 4. Pre and post-intervention assessments were conducted, and statistical analysis revealed a significant improvement in dribbling skills post-intervention. Thematic analysis of student interviews highlighted the team-pair-solo method's positive impact on skill improvement, increased engagement, teamwork, and communication skills. While there was a preference for the new method, some students acknowledged the value of traditional approaches. The findings support the efficacy of team-oriented drills in enhancing basketball skills among grade 6 students, providing insights for educators and coaches. Further research should consider individual learning preferences for comprehensive skill development programs.

Keywords — *Action Research, Basketball Skills, Team-Pair-Solo, Grade 6 Pupils, Skill Improvement*

I. Introduction

Context and Rationale

In teaching basketball skills, it's important to consider different methods of instruction such as team, pair, and solo drills. Team drills focus on developing teamwork, communication, and cooperation among players (Franca et al., 2019). Pair drills emphasize teamwork between two players, improving their chemistry and understanding of each other's strengths and weaknesses. Solo drills, on the other hand, allow players to focus on individual skills and techniques, such as dribbling, shooting, and footwork. By incorporating a variety of drills and approaches, coaches can create a well-rounded training program that helps players develop their skills in different scenarios and situations (Amelia, 2019). The action research entitled "The Impact of Team-Pair-Solo on Improving Grade 6 Pupils' Skill Test in Basketball" aims to study the effect of different approaches to basketball training on the skill level of grade 6 pupils. The study focuses on evaluating the effectiveness of team, pair, and solo drills in improving the pupils' performance in various basketball skills such as dribbling, shooting, and teamwork.

The rationale for this research is to provide a deeper understanding of the impact of different teaching methods on pupils' skill development in basketball. With the increasing popularity of basketball as a sport, it is important for educators and coaches to understand the most effective ways to teach the sport to young pupils. By evaluating the impact of team, pair, and solo drills, this study aims to provide valuable insights for coaches and educators in designing effective training programs for basketball.

Moreover, this research aims to address the challenges faced by coaches in teaching basketball to pupils of this age group. By providing a more comprehensive understanding of the impact of different teaching methods, this study can help coaches to make informed decisions on how to structure their training programs to maximize the skills development of their pupils. The results of this study can also provide valuable insights for future research in the field of basketball education.

Innovation, Intervention and Strategies

The researcher will use the Team-Pair-Solo may involve the following steps:

The use of team, pair, and solo drills can have a significant impact on improving the skill level of grade 6 pupils in basketball.

Team drills help pupils understand the importance of teamwork and develop their communication and cooperation skills. This can lead to improved performance in games where players need to work together to achieve a common goal.

Pair drills allow pupils to develop a strong relationship with a specific teammate, improving their understanding of each other's skills and tendencies. This can lead to better on-court chemistry and more efficient teamwork during games.

Solo drills enable pupils to focus on individual skills and techniques, such as dribbling, shooting, and footwork. This type of training can help pupils improve their confidence and proficiency in these areas, leading to better overall performance.

By incorporating all three types of drills into their training program, coaches can provide pupils with a comprehensive education in the sport of basketball, allowing them to develop their skills and improve their overall performance on the court.

Action Research Questions

The action research aimed in assessing the impact of team-pair-solo on improving grade 6 pupils' skill test in basketball and sought the following research questions:

1. To what Extent Impact of the Use of Team-Pair-Solo in Dribbling Basketball Skills of Grade 6 Pupils Before and After Intervention?

2. Is there a significant difference in the dribbling skill test results of the pupils before and after the use of Team-Pair-Solo?
3. How do the results of this study compare to traditional method as to the effectiveness in improving basketball skill test?

Ho: There is no significant difference in the skill test results of the pupils before and after the use of Team-Pair-Solo.

II. Methodology

Research Design

The research design for "The Impact of Team-Pair-Solo on Improving Grade 6 Pupils' Skill Test in Basketball" could be a pre and post design. In a pre and post design, the research participants are divided into two or more groups, and one group receives the intervention while the other group acts as a control. In this study, the intervention would be the different types of drills (team drills, pair drills, or solo drills), and the control group would be the grade 6 pupils who do not receive the intervention.

Participants and Other Data Sources

A sample of 15 grade 6 pupils who play basketball and attend a school in a specific geographic area will be selected to participate in the study. The sample size will be determined based on the availability of participants and the budget for the study.

The pupils will be divided into three groups, with each group receiving a different type of drill: team drills, pair drills, or solo drills. The drills will be conducted for a specified duration (e.g., 8 weeks) and frequency (e.g., 2 times a week). The drills will be designed to focus on specific skills, such as dribbling, shooting, and teamwork.

Research Instrument

The Basketball Skills Assessment (BSA) - This assessment measures basic basketball skills, including dribbling, shooting, and passing. The BSA uses a scoring system that ranges from 0 to 4, with higher scores indicating better performance.

Data Gathering Methods

Pre-Intervention Assessment: Before the intervention, the pupils will be assessed using a standardized skill test to measure their abilities in various basketball skills.

Post-Intervention Assessment: After the intervention, the same skill test will be administered to the pupils to measure any improvements in their skills.

Data Analysis

The data collected from the pre- and post-intervention assessments will be analyzed using statistical methods, such mean, and ranges, and independent samples t-tests, to determine the impact of the different drills on the pupils' skill level. The results will be compared between the three groups to identify any differences in the impact of team, pair, and solo drills.

III. Results and Discussion

Table 1 provides data regarding the influence of employing team drills on the dribbling abilities of sixth-grade students in the context of basketball. It compares the performance of these students prior to and subsequent to the implementation of the intervention. The pre-intervention scores (PRE) correspond to the initial assessment of dribbling skills, while the post-intervention scores (POST) reflect the skills observed after the team drills. The improvement column denotes the positive alterations in dribbling skills. It is worth mentioning that students 3, 4, and 5 exhibited a noteworthy increase of 4 points each, indicating that the team drills had a considerable beneficial effect on their proficiency in dribbling. In contrast, it was observed that students 6, 7, 10, 11, and 13 exhibited a marginal enhancement of 1 point, suggesting a comparatively moderate impact of the team drills on their proficiency in dribbling. The observed disparities in student progress may be ascribed to factors such as individual learning preferences, initial skill levels, or levels of involvement in collaborative exercises. In general, the upward trajectory observed in the majority of students' scores indicates that the implementation of team drills has a predominantly advantageous effect on the basketball dribbling abilities of sixth-grade students.

In conclusion, the findings of the intervention demonstrate that the implementation of team drills had a beneficial impact on the dribbling abilities of sixth-grade students. A significant proportion of students demonstrated an enhancement in their academic performance, with certain individuals exhibiting more pronounced advancements than their peers. It is imperative to acknowledge that the presence of individual differences can potentially account for the diverse range of improvements that are observed.

The results of this study highlight the potential efficacy of integrating team-oriented drills into basketball skill development programs aimed at grade 6 students. These findings offer valuable perspectives for educators and coaches who are interested in improving the basketball abilities of young athletes by utilizing collaborative training approaches. Additional investigation and careful examination of individual variables may enhance the effectiveness of these interventions.

Table 1: Extent Impact of the Use of Team Drills in Dribbling Basketball Skills of Grade 6 Pupils Before and After Intervention

STUDENT	PRE	POST	IMPROVEMENT
1	2	4	2
2	2	4	2
3	1	5	4
4	1	5	4
5	1	5	4
6	2	3	1
7	3	4	1
8	2	5	3
9	1	4	3
10	3	4	1
11	2	3	1
12	1	4	3
13	3	4	1
14	2	5	3
15	1	4	3

Table 2 demonstrates a statistically significant difference in the outcomes of the dribbling skill assessment for sixth-grade students prior to and following the introduction of the team-pair-solo intervention. The average pretest score was 1.8, whereas the average posttest score exhibited a significant increase to 4.2. The observed significant rise in performance implies that the implemented intervention yielded a favorable effect on the students' ability to dribble. The minimal variability observed in the pretest (0.6) and posttest (0.457142857) scores suggests a high level of consistency in the students' performance. The Pearson correlation coefficient of -0.327326835, as observed, indicates a weak negative linear association between the pretest and posttest scores. This suggests that students with lower initial scores tended to exhibit more significant improvement.

The obtained t-statistic of -7.855844048 exhibits a high level of significance ($p < 0.001$), indicating that the observed disparity in mean scores between the pretest and posttest is highly improbable to have arisen due to random chance. The p-value of 1.69121E-06, calculated for a two-tailed test, falls significantly below the commonly accepted significance level of 0.05. This provides additional evidence in favor of rejecting the null hypothesis. From a practical standpoint, it can be concluded that there is a significant statistical improvement in dribbling skills following the team-pair-solo intervention. The results of this study offer empirical support for the notion that the implementation of team drills had a beneficial effect on the basketball abilities of sixth-grade students, particularly in relation to their dribbling skills. These findings underscore the potential efficacy of this intervention in improving fundamental skills among young individuals engaged in basketball.

Table 2: Significant Difference in the Dribbling Skill Test Results of the Pupils Before and After The Use Of Team-Pair-Solo

	Pretest	Posttest
Mean	1.8	4.2
Variance	0.6	0.457142857
Observations	15	15
Pearson Correlation	-0.327326835	
Hypothesized Mean Difference	0	
df	14	
t Stat	-7.855844048	
P(T<=t) one-tail	8.45604E-07	
t Critical one-tail	1.761310136	
P(T<=t) two-tail	1.69121E-06	
t Critical two-tail	2.144786688	

The thematic analysis of student interview feedback indicates a strong preference for the team-pair-solo method over traditional methods in terms of improving basketball skills. The interactive and collaborative nature of the team drills was consistently praised for its positive impact on skill development, engagement, and teamwork. However, the analysis also highlights the importance of recognizing individual learning preferences and suggests that a combination of both traditional and innovative methods may offer a well-rounded approach to basketball skill

- 1. Positive Impact on Skill Improvement:** Across all interviews, students consistently expressed that the team-pair-solo method had a notably positive impact on their basketball skills. They highlighted improvements in dribbling, teamwork, and overall game understanding. Students frequently mentioned that the interactive and collaborative nature of team drills contributed to a more engaging and effective learning experience compared to traditional methods.
- 2. Increased Engagement and Motivation:** A recurring theme in the interviews was the heightened level of engagement and motivation associated with the team-pair-solo approach. Students conveyed that the dynamic and interactive nature of the drills made learning more enjoyable, fostering a positive attitude towards skill development. This stands in contrast to their perceptions of traditional methods, which some students described as monotonous and less stimulating.
- 3. Teamwork and Communication Skills:** A significant theme that emerged was the emphasis on teamwork and communication skills fostered by the team-pair-solo method. Students appreciated the collaborative aspect of the drills, noting that it not only improved their individual skills but also enhanced their ability to work effectively within a team. Traditional methods, according to some students, focused more on individual performance, neglecting the crucial interpersonal aspects of the game.

4. **Variability in Learning Preferences:** While the majority of students praised the team-pair-solo method, a notable theme highlighted the variability in learning preferences. Some students acknowledged that traditional methods, with their structured and repetitive nature, provided a sense of consistency and predictability that suited their learning style. This suggests that the effectiveness of teaching methods may depend on individual preferences and learning styles.
5. **Acknowledgment of Traditional Methods:** Despite the enthusiasm for the team-pair-solo approach, there was a theme of acknowledging the value of traditional methods in certain aspects of skill development. Some students noted that foundational skills were effectively introduced through traditional methods, suggesting a potential complementary role for both approaches in a comprehensive basketball training program.

IV. Conclusion

The study demonstrates a substantial positive impact of team drills on the dribbling abilities of sixth-grade students. While students exhibited varied improvements, with some showing significant advancements and others more moderate enhancements, the implementation of team-oriented drills notably enhanced basketball skills. Individual differences, including learning preferences and initial skill levels, likely contributed to the diverse range of improvements observed.

The statistical analysis confirms a significant improvement in dribbling skills following the team-pair-solo intervention, highlighting its efficacy in enhancing fundamental basketball abilities among young learners. Additionally, thematic analysis of student feedback emphasizes the preference for interactive and collaborative drills over traditional methods, showcasing the positive impact on skill development, engagement, and teamwork.

V. Recommendations

The following recommendations were infer based on the findings:

1. **Integrated Training Approaches:** Incorporate both team-oriented drills and traditional methods in basketball skill development programs to cater to diverse learning preferences and optimize skill enhancement.
2. **Individualized Training:** Tailor drills to accommodate individual skill levels and preferences to ensure a more personalized and effective learning experience.

3. **Continuous Improvement:** Continuously assess and adapt training methods based on student feedback and performance to enhance engagement and maximize skill development.
4. **Educator and Coach Awareness:** Educate educators and coaches about the benefits of interactive and collaborative training approaches, encouraging their integration into basketball training programs.
5. **Further Research:** Conduct further research to explore the synergies between different training methods and individual learning styles to optimize skill development in basketball programs.

ACTION PLAN

Week	Objective(s)	Strategies/Activities	Time Frame	Persons Involved	Expected Output
Week 1	Assess Current Skill Levels	Conduct individual skill assessments	1 week	Coaches, Trainers	Baseline data on current skills
Week 2	Set Clear and Achievable Goals	Collaboratively establish skill improvement goals	1 week	Coaches, Players	Defined goals for each participant
Week 3	Team-Pair-Solo Method Implementation	Introduce and implement team-pair-solo drills	2 weeks	Coaches, Trainers	Increased familiarity with new method
Week 4	Monitor and Adjust	Regularly assess progress and adjust activities	Ongoing	Coaches, Players	Real-time feedback and adjustments
Week 5	Individualized Training	Tailor drills to address specific needs of each player	2 weeks	Coaches, Trainers	Improved individual skill development
Week 6	Foster Teamwork and Communication	Emphasize collaborative drills and communication	2 weeks	Coaches, Players	Improved teamwork and communication
Week 7	Review and Reflect	Reflect on progress, identify challenges, and adjust	1 week	Coaches, Players	Insights for further improvement
Week 8	Final Assessment and Celebration	Conduct final skill assessments and celebrate progress	1 week	Coaches, Players	Comparative data and celebration

Financial Report

Particulars	Cost
Photocopy of Research Questionnaires	50.00
Printing of Manuscripts	50.00
Copy Reader	500.00
Plagiarism Check	1,000.00
Data and Statistics Analysis	500.00
Internet Expense	500.00
Transport and other expenses	100.00
Total	2,700.00

Appendix A

Assent Form

I, the undersigned, confirm that: please check the box (☐) as appropriate.

1.	I have read and understood the information about the research project.	<input type="checkbox"/>
2.	I have been given the opportunity to ask questions about the project and my participation.	<input type="checkbox"/>
3.	I voluntarily agree to participate in the project.	<input type="checkbox"/>
4.	I understand I can withdraw at any time without giving reasons and that I will not be penalized for withdrawing nor will I be questioned on why I have withdrawn.	<input type="checkbox"/>
5.	The procedures regarding confidentiality have been clearly explained (e.g. use of names, pseudonyms, anonymization of data, etc.) to me.	<input type="checkbox"/>
6.	Terms of consent for interviews, audio, video or other forms of data collection have been explained and provided to me.	<input type="checkbox"/>
7.	The use of the data in research, publications, sharing and archiving have been explained to me.	<input type="checkbox"/>
8.	I understand that other researchers will have access to this data only if they agree to preserve the confidentiality of the data and if they agree to the terms I have specified in this form.	<input type="checkbox"/>
9.	I do not want my name used in this project.	<input type="checkbox"/>
10.	I, along with the Researcher, agree to sign and date this informed consent form.	<input type="checkbox"/>

Participant:

Name of Parent/Guardian

Signature

Date

Researcher:

Name of Researcher

Signature

Date

Appendix B

Dribbling Skills Rubric

Criteria	1 (Novice)	2 (Basic)	3 (Proficient)	4 (Advanced)	5 (Expert)
Ball Control	Limited control; frequent loss of ball.	Basic control; occasional loss of ball.	Consistent control; minimal ball loss.	Excellent control; rare ball loss.	Masterful control; no ball loss.
Speed and Agility	Very slow and hesitant movements.	Slow movements with some hesitation.	Adequate speed with occasional bursts.	Quick and agile movements.	Rapid, agile, and precise movements.
Change of Direction	Difficulty changing direction.	Basic change of direction skills.	Smooth change of direction with control.	Quick and precise change of direction.	Seamless and unpredictable changes.
Use of Non-Dominant Hand	Rare use of non-dominant hand.	Limited use of non-dominant hand.	Adequate use of non-dominant hand.	Frequent use with good control.	Seamless integration of both hands.
Court Awareness	Limited awareness of surroundings.	Basic awareness of	Good awareness;	Excellent awareness;	Exceptional awareness;

		teammates and opponents.	reacts to game situations.	anticipates moves.	anticipates and directs play.
Creativity in Dribbling Moves	Limited variety in dribbling moves.	Basic variety with common moves.	Creative use of different dribbling moves.	Advanced repertoire of creative moves.	Innovative and unpredictable moves.
Protecting the Ball	Frequently loses possession due to poor protection.	Adequate ball protection; occasional loss.	Good protection with minimal loss.	Excellent protection with rare loss.	Exceptional ability to shield the ball.
Decision Making	Poor decision-making in choosing when to dribble.	Basic decision-making skills.	Good decision-making in dribbling situations.	Excellent decision-making; optimal choices.	Exceptional decision-making; strategic and adaptive.

Scoring Key:

- 1-2: Needs Improvement
- 3-4: Satisfactory
- 5: Outstanding

Each criterion assesses a specific aspect of dribbling skills, and the levels provide clear descriptions of proficiency at each stage. This rubric allows for a detailed evaluation of an individual's dribbling abilities, providing constructive feedback for improvement.

REFERENCES

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