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<https://ejournal.upi.edu/index.php/penjas/article/view/6-1-07>DOI: <https://doi.org/10.17509/jpjo.v6i1.31610>**Basketball Skill Achievements: Comparison between Technical Approach and Tactical Approach based on Physical Fitness Level**Lutfi Nur^{1*}, Arief Abdul Malik²¹Program Studi PGSD Kampus Tasikmalaya, Universitas Pendidikan Indonesia, Indonesia²Program Studi Pendidikan Jasmani, Universitas Siliwangi, Indonesia**Article Info***Article History :**Received January 2021**Revised January 2021**Accepted March 2021**Available online April 2021**Keywords :**basketball skill, physical fitness, tactical approach, technical approach***Abstract**

Learning approaches, such as tactical approach and technical approach, have been widely discussed for promoting physical activity in Physical Education learning. The application of a suitable learning approach becomes an important issue due to the different fitness level of individual. The purpose of this study was to investigate the basketball skill learning outcome by applying the learning approaches based on the physical fitness level of adolescent students. A 2 x 2 factorial design (ANOVA) was applied. Forty junior high school male students were involved in this study. They were divided into 4 groups, including 2 high physical fitness groups and 2 low physical fitness groups by applying the tactical approach and technical approach. This study used the Indonesian Physical Fitness Test (TKJI) instrument for the Junior High School level and basketball skill test instruments, including passing, shooting, and dribbling tests. The results showed that, overall, students who received the tactical approach were better than students who received the technical approach. In the high physical fitness student group, the tactical learning approach showed a significant impact compared to the technical approach. However, in the students with low physical fitness group, the technical approach had a better effect on the students' basketball skills. It concludes that the two learning approaches are proven to be able to improve the basketball skill learning outcomes. For that reason, it is recommended to teach basketball skills using a tactical approach to students with good physical fitness. However, if the students have low physical fitness, it is suggested that technical learning approaches is given.

INTRODUCTION

Physical Education learning in schools, especially Junior High School students, is dominated by movement activities, both individual games and team games, which are usually modified by the teacher to encourage the student understanding, attitudes, and movement skills. (Haris & Ghazali, 2020). Furthermore, previous research revealed that a common obstacle found by teachers during Physical Education learning activities was that students did not take an active role in activities, or activities mostly determined by the teacher, due to fear or did not fit in with the group, thus they kept quiet and did other preferred activities (Haris & Ghazali, 2020). Therefore, the teacher's ability in understanding the students and determining the right learning approach are essential.

In choosing a learning approach, some Physical Education teachers emphasized that students must be proficient in certain skills before they acquire competences in a game (Ennis, 2011). As the result, many Physical Education teachers only focus on traditional methodologies for teaching skill developments without teaching how to play the game (D. Siedentop & Tannehill, 2000; Fernandez-Rio, Méndez-Giménez, & Méndez Alonso, 2017). The implementation of the technical approach prioritizes technical skill learning or basic movement and technical trainings in the field separately (Priklerová & Kucharik, 2015), thus the students pay less attention to the understanding of its implementation in the real game (Kirk & Macphail, 2002). It will certainly have an impact on student learning outcomes in understanding and practicing movements in a game. It should be remembered that each student has different characteristics, such as in understanding movement patterns, physical conditions, and so on, so that it requires a teacher to be able to adapt the learning approach to the characteristics of the students.

One of the challenges of implementing the technical approach is that teachers need a relatively longer time to teach or repeat basic techniques using the drill method. Therefore, it seems that this approach tends to be boring and monotonous, which results in the low enthusiasm of students in participating in the learning process. In addition, when a learning is carried out by providing a basic technique training separated from the playing concept, students will be difficult to implement the connection between the basic techniques they have

learned and mastered and the system of playing as a whole. The results of previous research revealed that the teacher-centered learning approach had a disadvantage related to the student involvement due to limited responsibilities, where the students would eventually get bored with physical exercises and basic techniques which were carried out continuously, especially for students who could not play sports or games effectively (Himberg, Hutchinson, & Roussell, 2003; D. Siedentop & Tannehill, 2000).

The technical approach is the most widely used learning method in sport lessons (Fernandez-Rio, Méndez-Giménez, & Méndez Alonso, 2017) because this method focuses on content or skill developments and teacher-centered decisions (Metzler, 2000). It is especially useful for improving the basic techniques of an athlete as well as the skills of students who require a special learning (Corbett dkk., 2018; Nishimura, Miyazaki, Kinomura, & Kizuka, 2021). However, the technical approach has received a criticism which states that teaching basic technical skills before individuals understand its relationship to the actual game situation in the real field will only eliminate the essence of the game itself. (Kirk & Macphail, 2002, Gréhaigne, Griffin, & Richard, 2005). Therefore, the concept of learning approach through a game is considered suitable to overcome the weakness of the technical approach; gradually, the concept of learning approach through a game spreads throughout the world known with different names, such as the Tactical Game Approach (Griffin et al., 1997), Play Practice (Lauder, 2001), Concept Approach (Wright, McNeill, Fry, & Wang, 2005), Tactical Decision Learning Model (Gréhaigne, Griffin, & Richard, 2005), and so on.

The concept of learning approach through games, or originally known as Teaching Games for Understanding (TGfU), was discovered by Rod Thorpe, David Bunker and Len Almond and introduced to the public in 1982 by introducing 6 phases of the game approach, namely: game, game appreciation, tactical awareness, decision making, skill execution, and game performance. This approach is beneficial to promote the tactical knowledge about the concept of playing and the development of skills required in the game; hence, by understanding the concept of playing that has been mastered, the students are expected to be able to apply and combine the appropriate basic techniques in a game

(Chatzipanteli, Digelidis, Karatzoglidis, & Dean, 2014; Harvey, Cushion, Wegis, & Massa-Gonzalez, 2010; Kirk & Macphail, 2002).

In the learning process at school, besides the use of the learning approach, the student physical fitness is also a factor that should be considered by a teacher, because the true purpose of Physical Education in school is to encourage students to have a good fitness (Erflé & Gamble, 2015; Rexen et al., 2015). Physical fitness is an individual health status related to the individual's ability to carry out an activity without excessive fatigue, thus, by having a good physical fitness, a person can carry out the activities properly and gain a better physical growth (Ferrans, Zerwic, Wilbur, & Larson, 2005). Previous research states that the level of individual physical fitness has a strong correlation with the increased performance in sports and motor skills (Ortega et al., 2015). Therefore, teachers should pay attention to the student physical fitness so that they can choose a suitable and accurate learning approach.

Basketball game learning is one of the sport games taught in Junior High Schools. In the Physical Education curriculum, besides improving the student physical fitness and movement skills, Physical Education learning also has a function to build a discipline attitude, sportive attitude, and so on, as well as train the student cognition in understanding the material so that students gain a comprehensive understanding and benefits. (Suherman, 2018). To conduct an effective learning process, the teacher needs to choose the right learning approach so that the learning objectives and learning activities could run as expected and effectively. The efficacy of learning activities is characterized by students who actively learn, accompanied by the teacher, so that the learning activities remain at the level of the student ability and development (Rink, 2013).

Regarding the technical approach and tactical approach, previous research stated that the measurement results using the System for Observing Fitness Instruction Time (SOFIT) show that the student physical activity was in the moderate to vigorous physical activity (MVPA) category and vigorous physical activity (VPA) category and was significantly higher in the tactical game model (TGM) classes compared to classes receiving a Direct Instruction (DI). It suggests that the shift of DI to TGM, where the main aspect is the participation

in modified games, gives students the opportunity to achieve the current physical activity, which is shown by the less time spent for managing the class and more time for the skill practice and game play (Harvey, Smith, Fairclough, Savory, & Kerr, 2015). Furthermore, Priklerová & Kucharik (2015), in their research, revealed that tactical and technical learning approaches were equally effective in teaching game skills, but tactical learning approach, compared to technical learning approach, provided students with joy and fun, eliminated boredom in monotonous game skill trainings, and taught the principles of fair play and tactical skill thinking as an integral part of game performances.

Technical approach and tactical approach have their own advantages and disadvantages in Physical Education learning. Therefore, in this study, the researchers were interested in investigating and comparing the two learning approaches in adolescent students with high level of physical fitness and low level of physical fitness. The researchers intended to investigate the effectiveness of technical and tactical learning approaches in students with high and low physical fitness levels on basketball playing skill learning outcomes.

METHODS

Experimental research with factorial design (Fraenkel, Wallen, & Hyun, 2012) was applied to investigate the effectiveness of the effect of the learning approaches and the physical fitness levels of adolescent students on the basketball skill learning outcomes.

Participants

Participants of the study were 40 male junior high school students in grade 8 from Sukabumi Regency, West Java, Indonesia with Sundanese ethnicity. Students were divided into four experimental groups, consisting of 10 students for each group.

Materials and Apparatus

Researchers used two research instruments to obtain data in this study. The first instrument was the Indonesian Physical Fitness Test (TKJI) for Junior High School students consisting of five test items, including 50m sprint, 60 second body lift for men, 60 seconds of sitting, straight jumping, and 1000-meter run (Nurhasan, 2014). The second test instrument was a

basketball skill test consisting of three tests, namely the passing test, shooting test, and dribbling test with a validity r level of 0.89 (Nurhasan, 2014).

Procedures

First, 65 students were tested using the Indonesian Physical Fitness Test (TKJI) for Junior High School students. Then, the researchers grouped the participants according to their physical fitness level by selecting 27% of the students who got the highest physical fitness results score and 27% of the students who got the lowest physical fitness results. Therefore, 20 students with high physical fitness level and 20 students with low physical fitness level were found. Then, the researchers divided 20 students with high physical fitness level randomly into 2 groups to receive learning through technical and tactical approaches. The same procedure was conducted to the 20 students with low physical fitness level. They were randomly divided into 10 students per group to receive technical and tactical learning approaches. The next steps were 1) the four groups took the initial basketball skill test, 2) received the treatment in basketball learning, and 3) after the specified time, a final basketball skill test was carried out.

Data Analysis

The data analysis was carried out to determine the meaning of the obtained data. The calculation of data analysis was conducted by calculating the mean value and standard deviation. Then, the normality and homogeneity tests were performed using the Lilliefors test and the Bartlett test. Furthermore, the hypothesis testing was carried out using the factorial analysis of variance (ANOVA) technique with a significance level of $\alpha = 0.05$. If there was an interaction, it would be followed by the Tukey Test.

RESULT

This study was aimed at investigating the effect of tactical approach and technical approach on the basketball skill learning outcomes of students having high physical fitness and low physical fitness in Junior High School level.

Table 1 presents that the mean value of tactical learning is 20.40 ± 4.25 for students with high physical fitness category and 12.70 ± 2.58 for students with low physical fitness category. Meanwhile, the mean score of

technical learning group is 9.70 ± 2.87 for students with high physical fitness category and 18.50 ± 1.90 for students with low physical fitness category. Furthermore, the results of basketball skills of students with high and low physical fitness levels receiving learning through the technical and tactical learning approaches can be seen in the ANOVA test results shown in Table 2.

Table 1. Summary of Student Basketball Skill Learning Outcomes

Physical Fitness Category	Method			
	Tactical Approach		Technical Approach	
	Mean	SD	Mean	SD
High Physical Fitness	20.40	4.25	9.70	2.87
Low Physical Fitness	12.70	2.58	18.50	1.90
Total	16.55	3.42	14.1	2.39

Table 2. Summary of Two-Way Factorial ANOVA Results

Variance Sources	Fh	Ft	Description
Tactical Approach	6.57	4.11	Significant
Technical Approach	0.33	4.11	-
Interaction	74.47	4.11	Significant

Table 2 shows the results of the Two Path Factorial ANOVA regarding the difference of the effect of the application of the tactical approach and the technical approach on the student basketball skill learning outcomes. It found that there were differences between the treatment learning approaches. The Fh value was 6.57, which was greater than the Ft value (4.11) with the level of significance 0.05. It means that there was a significant difference in the basketball skill learning outcomes of students who received a tactical approach and students who received a technical approach. Furthermore, the analysis result of the interactions that occurred between the research groups applying the tactical and technical approaches, with high and low physical fitness levels in the basketball skill learning, shows that the Fh value was 74.47, which is greater than the Ft value (4.11.) with a significance level of 0.05. It means that, there was a significant interaction between the research groups, that applied tactical and technical approaches with high and low physical fitness levels, and the basketball skill learning outcomes. The overview of the interactions between the study groups is shown in

Figure 1.

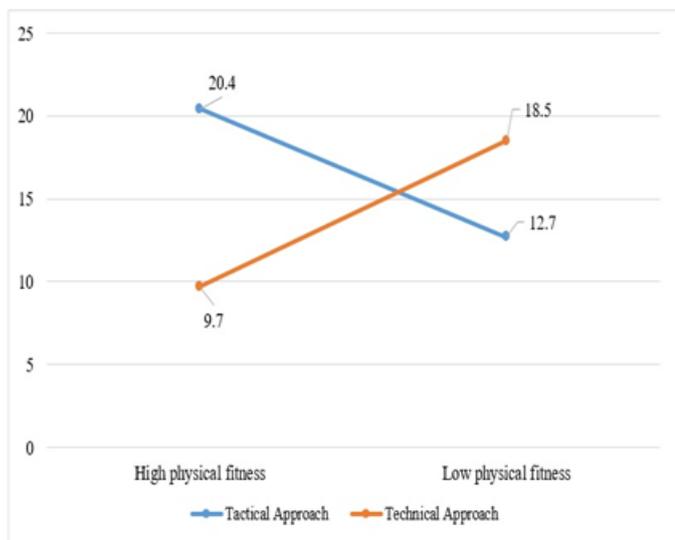


Figure 1. Interaction between The Research Group

Figure 1 shows the interaction that occurred between the research groups applying tactical and technical approaches with high and low levels of physical fitness and the basketball skill learning outcomes. The application of the tactical approach to students with a high physical fitness level had a higher result compared to students with low physical fitness levels. On the other hand, the use of technical approach in basketball skill learning gave a better outcome in students with a low physical fitness level group than in the students with a high physical fitness level group. To find out the difference, further analysis was carried out using the Tukey test. The result is shown in Table 3.

Table 3. Summary of the Tukey Test Result

Compared Group		Q _o	Q _t	Description
High Physical Fitness	Tactical VS Tecnical	11.76	3.15	Significant
Low Physical Fitness	Tactical VS Tecnical	6.37	3.15	Significant

The Tukey test results, as shown in Table 3, show that there was a significant difference in the high physical fitness group applying tactical and technical approaches. The obtained Q_o value was 11.76, greater than Q_t (3.15). It indicates that the tactical approach had a more significant impact on the basketball skill

learning outcomes compared to the technical approach. Meanwhile, in the low physical fitness group, the Q_o value was 6.37, greater than Q_t (3.15). The finding indicates that there was a significant difference between the two groups and the technical approach was better than the tactical approach for the low physical fitness group.

DISCUSSION

In this study, the tactical approach and technical approach had a significant impact on the basketball skill learning outcomes. However, in general, the tactical approach was superior to the technical approach. Researchers found that, when students learned through the tactical approach, they had a higher enthusiasm for learning and were enthusiastic when doing fun game activities. They gained an understanding of playing tactics so that they felt as if they were in a real match. This is in line with the findings of previous research stating that the application of the tactical approach can encourage student to be actively involved in sports activities; besides, it can also promote the development of tactical knowledge and required movement skills in a game. (Smith et al., 2015). Through the tactical approach, basketball learning activities were organized into fun activities providing various games for enhancing the student playing understanding so that the students were more enthusiastic or motivated in carrying out their learning, which had an impact on the effectiveness of the learning. The results of previous research revealed that the tactical learning approach aimed to combine tactical awareness and movement skills to improve students' game performances directed through understanding playing pattern learning, which indirectly made the learning atmosphere more interesting and encouraged students to be actively involved in the learning process (Priklerová & Kucharik, 2015).

In the application of technical learning, researchers found that students tended to get tired quickly and felt bored with monotonous learning situations so that students were not enthusiastic in participating in learning and lack of concentration and motivation to develop their abilities in playing basketball skills. During the learning process, which mostly contained drill exercises, students often asked the teacher "when will we begin to play?" as if they were impatient to play the game. This is in line with the previous study that revealed that learning through games was more fun for

students than technically oriented training or drill training where the students often asked "when are we going to play the game?" (Jones, Marshall, & Peters, 2010). The concept of the technical approach itself tends to emphasize on basic technics mastery, which are carried out separately and repeatedly until the teachers consider it sufficient and the students have mastered it, before playing the game; thus, it has its own challenges in the learning process because the repetitive process of movement, which is conducted too often, has a potential to bring out boredom in students (Quay & Peters, 2008).

Another finding from this study is the interaction between tactical and technical approaches and the physical fitness levels on the basketball skill learning outcomes. The relationship between the learning approach and physical fitness is highly possible, because physical fitness is required in carrying out physical activities and exercises, including in the Physical Education learning process. Therefore, students who have good physical fitness will have needed requirements, such as endurance, strength, ability to move, and others, that will support the quality of students in participating in the learning process or exercises, which ultimately have an impact on a more optimal basketball skill learning outcome achievement compared to students with the low physical fitness level (Grissom, 2005). Thus, the learning approach and physical fitness are two interrelated and contributive aspects of a Physical Education learning process, such as playing basketball in school (Brooker, Kirk, Braiuka, & Bransgrove, 2000; Cleary, Zimmerman, & Keating, 2006).

Further findings show that the application of the tactical approach on the students with high physical fitness group had a more significant impact than the basketball skill learning outcomes of the group that applied the technical learning approach. Regarding basketball skills, the application of a tactical approach is useful for encouraging students to understand and solve tactical problems in a game by applying and combining several technical skills in real game situations. Strengthening the research findings, the results of previous research on various sports revealed that providing a tactical approach was proven to be more effective than providing a technical approach in various learning games, such as ice hockey (Alison & Thorpe, 1997), football (Psotta & Martin, 2011), mini handball

(Priklerová & Kucharik, 2015), and so on.

In contrast, in the students with a low physical fitness level group, the provision of the technical approach had a more significant effect compared to the tactical approach on the basketball skill learning outcomes. In this study, when students who have a low physical fitness level received the tactical learning approach, the game pattern learning cannot run optimally. In addition, students felt tired quickly and were more silent or only did a little movement because the game activity was draining. Thus, it was hard for them to concentrate when the explanation of the tactics was given. Previous research revealed that game-based training and technical instruction training had their own advantages and disadvantages in the implementation, for example, game-based training, that might be suitable for team conditioning in team sports competitions, might be not suitable for simulating the demands of running competitions, such as repetition and high intensity, so that the application of the method depends on the goal expected by the trainer or teacher (Gabbett, Jenkins, & Abernethy, 2009). On the other hand, in the implementation of the technical learning approach, basketball learning activities were directed at drill exercises to master the basic basketball skill techniques, which made this approach monotonous and boring for students, so that it did not stimulate student interest. Although they looked bored at the beginning, they were more enthusiastic in the next lesson because the drill material that was applied gradually helped improve their skills and increase their confidence when playing the game. It is because the characteristics of the technical learning approach implementation in the learning process include a lower mobility for students to move compared to the tactical approach implementation, so that students with low physical fitness levels can follow the learning process optimally and have an impact on their basketball skill learning outcome developments (Bogdanis, Ziagos, Anastasiadis, & Maridaki, 2007). Furthermore, the drill practice material also helped students get a better physical fitness. Previous research examining the application of technical training to improve running performance of High School female students having low running performance showed that the application of the training technique was effective in improving running ability (Nishimura, Miyazaki, Kinomura, & Kizuka, 2021).

CONCLUSION

The authors concluded that, in general, the tactical approach intervention had a better impact than the technical approach on the basketball skill learning outcome achievements. Furthermore, there was an interaction between the learning approach and the level of physical fitness, which means that there is a relationship between these variables. Furthermore, according to the student physical fitness level, the tactical approach had a better impact on the basketball skill learning outcomes for students with high physical fitness levels, while for students with a low physical fitness level, the technical approach had a better impact.

The Authors recommended that teachers should be able to see the characteristics of students before determining the learning approach, because each learning approach has its own characteristics. Therefore, the same learning approach could not suit the characteristics of all students in different classes and different schools. This research is limited to male student participants in Junior High School level. For that reason, the researchers hoped that the next research could compare the female students at other educational unit levels.

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