

Model Teaching Style and Motor ability on Sport Science Student Achievement Learning Outcome Sepak Takraw

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Abstract

The purpose of this study was to determine the effect of applying reciprocal teaching styles, teaching style practice in groups of students who have high motor ability and groups of students who have low motor ability on the results of learning the basic techniques of sepak takraw (Sepak sila, heading, Service dan smash). The research method used is the experimental method with 2x2 design by level, The sample in this study amounted to 44 students consisting of 22 people with high motor ability and 22 people with low motor ability as a result of using the motor ability barrow test with a reliability of 0.93 (Standing Broad Jump, Soft Ball Throw, Zig-zag Run, Wall Pass, Medicine Ball Put, Sprint 50 meter). Furthermore students are grouped into four groups, each of which amounts to 11 people who are taught by following the concepts of Mosston and Ashworth's teaching styles. Data collection on learning outcomes of the basic techniques of sepak takraw is done with a test instrument that has been validated by experts of sepak takraw. The results showed that reciprocal teaching styles were more effectively used to teach basic sepak takraw techniques than practice teaching styles for students who had high motor ability, for students who have low motor abilities, reciprocal teaching style and practice teaching style do not have differences in the effect of learning the basic techniques of sepak takraw and there is an influence of the interaction between teaching styles and motor ability on the learning outcomes of basic techniques of sepak takraw.

Keywords

Achievement Learning Outcome Sepak takraw, Teaching Style and Motor Ability

1. Introduction

Sepak takraw is a modern traditional sport that has been modified and recognized throughout the world (Kosni et al. 2017). The first time sepak takraw was introduced to the 10th Asian Games on Beijing in 1990 and began to develop in more than 20 countries (Jawis et al. 2005). Sepak takraw is now a recreational and competitive sport that is played throughout the world and is being promoted to be a team event at the Olympic Games (Sujae and Koh 2008). Sepak takraw is played in a team of three, namely tekong, feeder and spiker. Tekong is responsible for taken services, feeder feeds the ball to tekong while spiker is in charge of spiking the ball (Kosni et al. 2018).

In Indonesia (Astra and Artanayasa 2017), China (Chen et al. 2018), Philippines (Chen and Xiao 2017), Malaysia (Hamid et al. 2015) and other countries sepak takraw become part of the learning curriculum in university. Sepak takraw is very suitable with physical education goals which make the players have good manipulative movement skills, excellent physical condition, speed of making decisions in motion, and emotional stability (Yusup 2001). As for the basic techniques of sepak takraw include kick techniques, heading, service receiving the first ball, smash, block and bait (Hakim et al. 2007). To be able to play sepak takraw you must first master the basic techniques of sepak takraw, because mastering basic skills before learning more complex skills is very important (Coh et al. 2004).

The research that has been done in the learning process of basic techniques is carried out using the game approach (Yulianti 2014; Sigit 2014; Arman et al. 2013; Widodo and Sudarso 2018), with the approach to modifying sepak takraw balls (Saputra et al. 2017; Nizam et al. 2017; Sunarto et al. 2016). The findings of these studies state that

each of them can improve the learning outcomes of basic sepak takraw techniques. But these findings were not carried out on the whole basic techniques of sepak takraw, only on one basic techniques, and the sample only is elementary school students and junior high school students. These findings certainly can only be applied to the same sample level and only to certain sepak takraw techniques.

In the learning process, teachers and students are two components that must intertwine mutual interactions so that student learning outcomes can be achieved optimally (Rustaman 2001). The second factor determines the success of learning basic sepak takraw techniques. The role of the teacher in learning must play an active role in using any learning approach, behaving as an activator more than the facilitator or guide (Hattie 2012). To maximize the role of physical education teachers in managing the learning process between learning material and students, it is known as Mosston and Asword teaching styles. Mosston's teaching style is a teaching style that is a reference in physical education programs and is widely applied by physical education teachers throughout the world (Jaakkola and Anthony 2011; Cothran et al. 2005; Tones et al. 2011). The findings in Indonesia state that physical education teachers have not fully implemented the teaching style based on the concept from Mosston (Setiawan and Nopembri 2013). And physical education teachers do not yet know the appropriate teaching style (Prasetyo 2013).

The first time the spectrum of teaching style was introduced in physical education in 1966 with initially 8 teaching styles and perfected into 11 teaching styles (Mosston 1994; Mosston and Ashworth 2002). Of the 11 styles of learning, there is no single teaching style that is perfect to be applied in physical education learning, because the results of research from each teaching style have a different influence on the results of physical education learning (H.Z. et al. 2009; Derri and Pachta 2007; Chatoupis 2005). Findings from the results of the study will be valuable information for physical education teachers to be chosen and referred to in the use of teaching styles that are suitable for learning and character characteristics of students (Byra and Jenkins 2000), therefore, research on the use of teaching styles in physical education has always been an interesting and useful thing to do (Byra and McCullick 2002).

The focus of this research is the use of exercise teaching style (B) and reciprocal style (C) on learning of sepak takraw. These two styles are included in the reproduction cluster A-E style is a style that is often used by physical education teachers (Cothran et al. 2005; Sympas and Digelidis 2014), and this cluster is very suitable for use in motor learning (H.Z. et al. 2009; Hennings et al. 2010; Pitsi et al. 2015). The student's teaching style of learning to do the task from the teacher's example (Mosston and Ashworth 2008). Class reciprocal teaching styles are arranged in pairs in each group, some act as actors and some act as observers (Mosston and Ashworth 2008). Of the two teaching styles have differences in learning conditions (Mosston and Ashworth 2008), reciprocal style of student learning in pairs and the training style of individual learning students. The limited knowledge about the influence of teaching styles on sepak takraw learning outcomes due to the limited research on the topic of this problem. For this reason, information and knowledge about the effects of training and reciprocal teaching styles are very much needed by physical education teachers.

The role of students in the process of learning basic techniques requires good physical readiness, (Harsono 2015) states that physical readiness that is not enough will also slow down or limit progress in learning techniques, physical readiness here focuses on the motor ability students have, Motor ability is a supporting factor in the performance of motor skills (Fleishman 1964; Battineli 2007; Edwards; Magil 2007). As for the components in the motor ability, namely muscle strength, muscle endurance, strength, speed, cardiovascular endurance, flexibility, agility and coordination (Battineli 2007).

Motor ability is an important factor in the motion learning process, because ability is part of individual traits that affect its ability to make skilled when learning new movement tasks (Fleishman 1964). One of the reasons for making mistakes in learning motion skills is because of a lack of motor skills (Čoh et al. 2004). Research findings from Cigrovski et al (2012), Kalač and Gontarev (2014), Blazević et al (2006), Iqbal et al (2015) Reported that motor ability has a significant influence on learning sports skills.

Many teaching styles that can be chosen and have good theories in their application, but the implications set out in spectrum theory have not been answered. For example, would a particular teaching style be more appropriate than other teaching styles for certain student groups? what are the effects of reciprocal teaching styles and teaching practice on the results of learning the basic techniques of sepak takraw? is there a motor effect on the use of the teaching style?. Therefore, the purpose of this study was to examine whether there were differences in the learning outcomes of basic sepak takraw techniques taught with reciprocal teaching styles and teaching practice styles in sepak takraw skills classes seen based on high motor ability and low motor ability possessed by students.

2. Methodology

This study uses an experimental method with 2x2 design by level. The population in this study were health and recreation physical education students in the sepak takraw skills class. To determine the sample in this study, the

entire population was tested using the Barrow Motor ability test with a reliability of 0.98 (Standing Broad Jump, Soft Ball Throw, Zig-zag Run, Wall Pass, Medicine Ball Put, sprint 50 Meter) and refers to the formula Verducci (Verducci 1989). As a result a sample of 44 people was divided into 22 people who had high motor ability and 22 people who had low motor ability. Furthermore the sample was divided into two groups with simple randomized into each group reciprocal teaching style (A1) with high A₁B₁ motor ability (11 people), low A₁B₂ ability motor (11 people) and teaching practice style group (A2) with high motor ability A₂B₁ (11 people), with motorbike low ability A₂B₁ (11 people).

The researcher was assisted by two teaching staff in the Riau Islamic University who had agreed and were willing to assist in this research. The treatments in this study was 16 treatments with 2x50 minutes per treatment. Each group was taught according to the concept of the teaching style of mosston and ashword with the basic learning material of sepak takraw techniques (sepak sila, heading, service dan smesh).

Internal and external validity in this study were well controlled. The data on the learning outcomes of the basic techniques of sepak takraw was obtained, using a test instrument that has been validated by sepak takraw experts and each test has high reliability using (sepak sila 0,71. Heading 0,76. Service 0,73. Smesh 0,72). It mean that this test is feasible to be used to measure the learning outcomes of the basic techniques of sepak takraw. Scores swring on each test is assisted by experts of sepak takraw and equipped with video recordings to obtain maximum results. The summation of the average score of each basic sepak takraw technique becomes the value of learning the basic techniques of sepak takraw, by formula t-Skor. $Z = 50 - 10 \frac{(X - M)}{SD}$ where Z = the standard value, X = the raw score, M = the mean and SD = standard deviation. The results of the assessment are in the form of score with a scale of 100(Kadir).

3. Result

Descriptive statistics are calculated for the average score and the standard deviation of the two treatment groups: 2 (motor ability) x 2 (teaching style) independent group analysis (ANOVA) is used to check whether there is a significant difference between teaching style and motor ability see In table 1.

Table 1. Average score and standard deviation of learning outcomes for basic sepak takraw techniques for high motor ability and low motor ability in two teaching style groups (N = 44)

Groups	N	M	SD
Reciprokal/Motor Abiliy Tinggi (A ₁ B ₁)	11	58,43	3,77
Practice/ Motor Ability Tinggi (A ₂ B ₁)	11	51,98	4,34
Reciprokal/Motor Abiliy Rendah (A ₁ B ₂)	11	47,81	3,03
Practice/ Motor Ability Rendah (A ₂ B ₁)	11	47,87	3,86

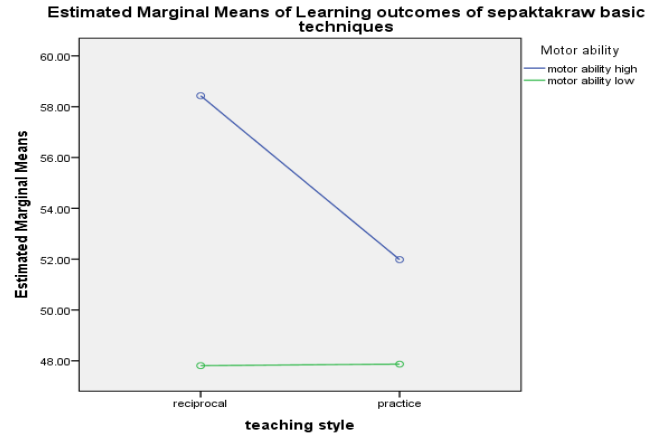
Information : M = mean, SD = Standart Deviation

Table 2. An independent group of ANOVA to find out the differences in the learning outcomes of basic sepak takraw techniques taught in two different teaching styles (N = 44).

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	825.943 ^a	3	275.314	19.303	.000
Intercept	116802.023	1	116802.023	8189.449	.000
A	112.256	1	112.256	7.871	.008
B	597.044	1	597.044	41.861	.000
A * B	116.643	1	116.643	8.178	.007
Error	570.500	40	14.263		
Total	118198.466	44			
Corrected Total	1396.443	43			

a. R Squared = .591 (Adjusted R Squared = .561)

Table 2, shaws that Fo (A) = 7.871 with p-value = 0,008 < 0,05 or H₀ rejected. This means there is different in the average of learning result of sepak takraw basic techniques between the students taught by using reciprocal teaching style and practice teaching style, meanwhile Fo (B) = 41.861 with p-value = 0,000 < 0,05 or H₀ rejected. This means there is difference in the average of learning result of sepak takraw basic techniques, the students who have high motor ability and the students who have low motor ability. Next, Fo (AB) = 8.178 with p-value = 0,007 < 0,05 or H₀ rejected, this means there is significant interaction influence between factor A (teaching styles) and factor B (motor ability) towards the achievement of sepak takraw basic techniques



Picture 1. Interaction A*B

Table 3. The results of further tests with t-dunnet to determine the difference in effect between teaching style and motor ability on the learning outcomes of basic sepak takraw techniques

No	Contrast scores	(Se)	t ₀	t _{table}	Information
1	$\bar{Y}_{A1B1} - \bar{Y}_{A2B1} (58,43 - 51,98) = 6,45$	1,09	4,01	1,67	Significan
2	$\bar{Y}_{A1B2} - \bar{Y}_{A2B2} (47,81 - 47,87) = -0,06$	1,09	-0,04	1,67	Non-Significant

Table 3, shaws that 1) $\bar{Y}_{A1B1} - \bar{Y}_{A2B1}$ with $t_0 = 4,01 > t_{table} 1,67$ then H_0 is rejected. Thus, on the students who have high motor ability, reciprocal teaching style is higher than practice teaching style. 2) $\bar{Y}_{A1B2} - \bar{Y}_{A2B2}$ with $t_0 = -0,04 < t_{table} 1,67$ then H_0 is accepted. Therefore, there is no difference in the average between reciprocal teaching style and practice teaching style on the students who have low ability.

4. Discussion

The findings of this study reveal that there are differences in the learning outcomes of basic sepak takraw techniques taught by two teaching styles (Reciprocal and Practice), Where are the basic learning outcomes for students who have high motor ability, reciprocal teaching style has more influence than teaching style practice. However, For students who have low motor ability, there is no different influence on the basic learning outcomes of sepak takraw techniques between reciprocal teaching styles and teaching style practice. The next result is the influence of the interaction between teaching style and motor ability on the results of learning the basic techniques of sepak takraw. The results of the first hypothesis state that the achievement scores of reciprocal teaching style on the students who have high motor ability are higher than practice teaching style on the students who also have high motor ability. This means reciprocal teaching style for the students who have high motor ability has better effect than practice teaching style. The finding result refers to the previous research result about reciprocal teaching style which states that skill performance has been shown to improve in different-aged learners across various motor tasks when practicing under the conditions of style (Ernst and Byra 1998; Goldberger and Gerney 1986; Mosston and Ashworth 2008; Pellett and Harrison 1995) and the important role of motor ability owned by the students explained because ability is part of individual characteristic which influences their ability to be skillful when learning new moves (Fleishman 1964). The results of the second hypothesis state that there is no different effect between Reciprocal teaching style and Practice teaching style on the students who have low motor ability. This result refers to the findings who state that for the students who have low ability in the learning process are les potential in acquiring complex motor skill (Puspitorini and Tangkudung 2016). By owning low motor ability, the students will be slow in doing the movement skills of sepak takraw basic techniques, because states that one of the factors of making mistake in learning the skill is lack of motor ability (Coh et al. 2004). On the practice teaching style, the research result states that practice teaching style has many repetition that the students choose and do, certainly this will require much energy (Edwards 2010). On the group of reciprocal style with low motor ability, this group frequently causes emotional situation among the doers and observers, because both of them have difficulty on the implementation and roles in learning sepak takraw basic techniques. From the result of this research, both teaching styles do not have different effect towards the students with low motor ability.

The results of the third hypothesis through the calculation of variance analysis indicate that there is a significant interaction effect between teaching styles and motor ability on the results of learning the basic techniques of sepak takraw. It is supported by the results of the study of (Janovici and Weissblueth 2016). When students are given the right learning tools and according to their level of motor ability, they automatically improve their performance and motoric performance. Both interactions are seen in the differences in the effect of treatment on learning outcomes of basic techniques at both levels of student motor ability. Thus it can be explained that the results of learning the basic techniques of sepak takraw, besides being influenced by the teaching style used, it is also influenced by the existence of other internal factors, namely the student's motor ability factor. That means, that reciprocal teaching style and practice will be better implemented by considering the motor ability possessed by students for the optimal learning outcomes of basic sepak takraw techniques. The interaction between teaching style and motor ability was also found in the results of research on the results of learning other basic sports techniques, such as volleyball (Rohyana 2016), soccer (Doli et al. 2018), sprint skills (Sobarna 2017).

5. Conclusion

The importance of the results of this finding is for physical education lecturers and teachers in sepak takraw learning, especially in choosing the teaching style that will be used to improve the learning outcomes of the basic techniques of sepak takraw. an instructor in physical education is important to consider teaching styles that are suitable and appropriate to achieve the goals of the learning to be achieved. Learning will be achieved if the teaching style used is in accordance with student characteristics. The results of this study state 1) For students who have high motor ability, reciprocal teaching style has a higher influence than teaching style practice on the results of learning the basic techniques of sepak takraw. 2) For students who have low motor ability, there are no different influences on the basic learning outcomes of sepak takraw techniques between reciprocal teaching styles and teaching practice styles. 3) There is an influence of the interaction between teaching style and motor ability on the results of learning the basic techniques of sepak takraw. The results of this study can be scientifically confirmed

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