Differences in the Influence of Learning Methods and Reaction Speed on the 2022 Women's PKO FIK UNIMED Sepaksila Learning Results

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Abstract. This study aims to determine (l) The difference in the influence of rattan ball and kenchi ball learning methods on takraw learning outcomes in the sepak takraw game (2) The difference in the influence of high reaction speed and low reaction speed on takraw learning outcomes in the sepak takraw game (3) There is an interaction between reaction speed and sepaksila learning outcomes in the sepak takraw game. The research results show (1) There is a difference in the influence of learning methods between rattan balls and kenchi balls on takraw learning outcomes in the sepak takraw game 4,900 > 2,048. (2) There is a difference in the influence of high reaction speed and low reaction speed on takraw learning outcomes in the sepak takraw game 6.991 > 2.048).(3) There is an interaction between reaction speed and sepaksila learning outcomes in the sepak takraw.

Keywords: Learning Method, Reaction Speed, Sepak Sila, Takraw

1. Introduction

Sepak sila is one of the basic technical skills in the game sepaktakraw which is also the most basic and important skill because this technique supports other basic techniques, because the sila sepak takraw technique is a basic movement used to pass the ball, defend and attack. The principles of sepak takraw technique are so important that every player must be able to do them well. According to (Dimas & Supriyadi, 2017), explains that sila sepak takraw is kick the ball using the inside of foot, both right and left, resembling the sila position and the other foot as support. Sepak sila is one of the basic techniques for playing sepaktakraw which has a big contribution to the game of sepaktakraw, especially among students or beginners in knowing the basic sepak takraw techniques. Almost all sepaktakraw games are played with sepak takraw. In line with that (Hananto & Hari, 2013) explains that the sila sepak takraw skill is an athlete's ability to kick (hold) the ball using the inside of the foot as much as possible.

The kicking movement is the dominant movement carried out by the player. This can be seen from the start of the game, defending, preparing attacks to scoring numbers or points. Sila takraw skills are very important, so it is recommended that if someone wants to excel at playing sepak takraw, they must first master the basic techniques of sila takraw movements. To master the basic sepak takraw techniques well, a student must do various forms of training. Forms of training to practice sila sepak takraw skills include individually and in pairs. Whether using media/tools or not. By implementing a good exercise program and doing it

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regularly, maximum results can be achieved. To achieve maximum results, physical condition support and internal motivation are also needed to be more enthusiastic in carrying out exercises to improve ball control (takraw) abilities.

Based on observations by PKO FIK Unimed students, especially female students, every semester they always experience difficulties in playing the ball, because it is done using the feet and the ball is in the air. This difficulty lies in the difficulty of controlling the ball, lifting the ball. the ball and controlling the ball. This failure means the ball cannot be controlled, cannot be passed, or cannot be given to a friend or returned to the opponent's playing area. As a result the game becomes uninteresting. Reaction speed is an ability that is really needed in the implementation of takraw. Reaction speed is closely related to muscle strength, aerobic endurance, coordination and technical skills as well as concentration to make quick and correct decisions in moving so it is needed in every sports. Reaction speed in sports also trains athletes motor skills so they are always moving. as ordered. Reaction speed is the time difference between the action and the stimulus sent by the nervous system from the muscle. The shorter the time required, the higher the reaction. Therefore, reaction speed is most supportive and has an meaningful role in the implementation of sepak sila in playing sepak takraw.

For good anticipation of the arrival of the ball, it is necessary to have a fast reaction in the foot movements supported by high concentration in special motiont patterns, holding, kick/hold the ball. A player who does not have a good level of reaction speed will not be able to hold, hold, pass the ball with good quality, as a result he will not be able to pass and return the ball to the opponent's area. Sepaktakraw players have a high level of difficulty, but the accuracy of their kicks must be relatively high, so they must have a good combination of vision, footwork and sensation. If the combination of several movements is unsuccessful, the kick result will be unsatisfactory. If the ball is kicked too slowly, the ball is too far from the body, the ball is hit with the wrong foot or the player is slow in controlling the ball, the ball will fall.

2. Theoretical review

The increasingly rapid development of the sepak takraw game has resulted in this game experiencing an increase in the number of championships. The sepaktakraw game is played by two teams, initially each team consisted of three players, but now it has developed into two against two (double event) and four against four (t quadrant), ring, and even the number of beach takraw matches has become large. has been added.

According to (Gani, 2018), there are several basic techniques in sepak takraw, namely sepak takraw training, the first of which is the form of sepak such as sila sepak, turtle sepak, gouge sepak, sepaktakraw, and sepak badek or side kick. The second uses the forehead, sides and back. The third is using the chest, using the chest and using the shoulders.

According to (Jawis, Singh, Singh, & Yassin, 2005), sepak takraw combines ball skills (kicking and juggling) with the agility and acrobatic movements of gymnasts as well as the instinctive reflexes of competitive badminton players. The sepaktakraw game is a game that uses all parts of the body except the hands but mostly uses the feet so kicking is the effective technique.

In sepaktakraw , a person is required to have good abilities and skills. The skills in question are the basic ability to play sepaktakraw. According to (Chen, Dai, Tang, & Xiao, 2018) Sepak takraw requires players to master various performance skills such as jumping, blocking, diving or spiking which are related to the need for strength, power, agility and speed during the duration of the game.

According to (Zainuddin, 2012) "The basic techniques of the sepaktakraw game include sepak takraw, sepak badek horse kicks, kick kicks, headers , thighs, serves (initial kicks), smashes and blocks." Meanwhile, according to (Sulaiman, 2014) basic techniques include: a) Kicking Technique, consisting of: Sila Sepaksila, Kura/Kuda Sepaksila, Pry Sepaksila, Simpuh/Badek Sepaksila, Sepak takraw Mula (serving), and Sepak Tapak (footing). ; b) Hamhama (thigh control), c) Mendada (chest control), d) Shoulder (shoulder control), e) Head (headbutt/heading), f) Smes Technique, consisting of: Kedeng and Roll, and g) Resistance Technique.

Sila sepaksila is a technique for kicking a takraw ball using one of the inner legs which is bent to resemble a cross-legged position while the other leg becomes the support (Aziz Hakim, 2007). Kick the ball using the inside of your foot. Sepaksila principles are used to hold and control the ball, pass between balls and save opponents' attacks. The technique of kicking the ball using the inside of the foot. The principles of sepaksila are used to receive, hold, control, pass and prevent opponent attacks.

A. Techniques for Performing Precepts

According to Wiyaka (2020), the way to carry out the precepts of sepaksila is:

1) Start by standing with your feet shoulder-width apart.
2) The striking leg (spak takraw) is moved in a folded state (sila) at the knee level of the supporting leg, with an axis is in the groin, while the supporting leg is relaxed and slightly bent.
3) Keep the distance between the ball and your body less than half an arm's length.
4) Hit the ball with the inside of your foot facing upwards. It keeps your ankles stiff without making them weak, increasing the strength of your hits and preventing the ball from rotating when you hit it.
5) Body lean forward slightly and look at the ball.
6) Both arms elbow bent to maintain balance.
7) When the ball hits (impact), stretch your ankles and feet straighten the supporting leg.
8) The ball is kicked upwards over the head.

Figure 1. Sila Sepaksila Performance

B. Common Mistakes in Performing the Sila Technique

1) The supporting leg is not bowed, as a effect the hitting leg unsuccesful perform
2) When the foot hits the ball, the ankle does not become stiff (tense), the result is that the shot becomes inaccurate and the ball spins.
3) Your body posture when hitting is too bent, causing the ball to hit your own mouth or face.
4) The kick is not strong enough because the ball is hit higher than knee height or the batter's feet are too high to pick up the ball that has not yet been knocked down.

Motor learning is learning that is realized through muscle responses expressed in body movements or body parts. According to Rusli Lutan (1988: 102) that, "Motor learning is a series of processes related to practice or experience that leads to permanent changes in skills. Established on this opinion, it can be terminate that motor learning is a change in motor behavior in the form of skills resulting from practice and experience. Efforts to master movement skills require a learning process, namely: movement learning process. According to Wahjoedi (1999: 119) in The Sports Science and Technology Journal states, "Mastery of movement skills can only be obtained through the implementation of movement with a planned, systematic and continuous learning program ." Learning must be well planned, arranged systematically and continuously.

With good, planned and continuous learning, students will get a good learning experience so that learning goals can be achieved. The aim of learning movement is so that students have movement skills as expected. Development of movement skills is the target of learning movement skills. If the student has mastered the skills learned, changes will occur in the student that will lead to effective and efficient movements. As quoted by Rusli Lutan &

Adang Suherman (2000: 56) states that there are three indicators of skilled movements, namely: "(1) effective means in accordance with the desired product, in other words product oriented, (2) efficient means in accordance with the product which are desired. with a process that must be carried out well, in other words process-oriented, and (3) adaptive, meaning in agreement with the situation and environmental requirement where the movement is carried out."

The process that occurs in movement learning has different characteristics from learning in general. In learning to move there is a process, namely changes in motor behavior, learning results that are better than before learning. In the process of learning movement there are several stages. According to Fitts & Posner (1967) quoted by Sugiyanto (1996:44) that, "The process of learning movement skills occurs in 3 learning phases, namely: (1) cognitive phase, (2) associative phase, (3) autonomous phase".

Apart from media as a tool to support success in learning sepak takraw, reaction speed is also needed, this is absolutely necessary as stated by Frank W. Dick (2009 : 91) that speed in coaching theory means the ability to move body parts, legs or arms. or a static part of the body and even the whole body at the highest speed is capable of doing it.

The game of sepak takraw is a fast game, meaning that players must have high movement speed, because the ball that is kicked will travel at high speed and will fall if it is not lifted to be kicked or taken back . The speed of the sepak takraw game exceeds the speed of the sepak takraw game, that is, it exceeds the speed of the volleyball and badminton games, all of which play the ball by volleying (meaning the ball is hit before it hits the floor or ground). This is because the takraw ball has very small/low elasticity, and kicking/hitting with the foot with great strength will cause the ball to travel quickly and sharply into the playing field, so that if it is a little late in receiving the ball, the ball will have fallen. to the playing field, so that the number oppose.

Speed is a person's ability to carry out continuous movements in the same form in the shortest possible time (Sajoto, 1995: 17). With his speed, a sepak takraw athlete will easily receive the ball from an opponent and pass it ball, smash, which can ultimately win the match. Apart from that, Muh. Sajoto (1995: 126) also said that in many sports, speed is an important physical component. Speed is a determining factor in sports such as sprinting, boxing, fencing, taekwondo, karate, and so on. Speed is the ability to perform similar movements sequentially in the shortest time.

Speed not only moves the whole body quickly, but can also occur in fast limb movements. The speed of movement of body parts such as the arms and legs is very important to provide accelerated movement of the legs and feet in the sport sepak takraw. takraw , especially the basic technique of sila sepak takraw movements.

The most appropriate quality of speed is categorized into three forms, namely:

a. Reaction speed is a person's bility to react to a stimulus as quickly as possible.
b. Movement speed is a person's ability to move as quickly as possible in a complete movement.
c. Sprint speed is a person's ability to move forward with maximum strength and speed.

Speed is also related to continuity as explained According to Ichsan (2004: 18) speed is a person's ability to carry out continuous movements in the same form in the shortest possible time, while reaction is a person's ability to immediately act as quickly as possible in response to stimuli generated through the senses, nerves. or other feelings. Reaction ability

in real terms is reaction time, namely the first movement made after receiving a stimulus. The reaction ability of the feet determines the movement to receive the serve Sepak takraw is determining the right position, eye and foot coordination, and the right ball kick. Delay in reacting to the ball from the opponent causing less accurate anticipation so that the first ball received is not perfect or directionless, gets stuck in the goal, or goes out of bounds game. In the sepaktakraw game. Reaction speed is related to the speed of responding to a ball that comes as a stimulus and hitting the ball with the foot (smash and serve) as an action that must be taken. Reaction speed will affect the speed of the ball hit (timing). Because the pace of the sepaktakraw game is very fast, correct timing is needed. If you are just a few moments late, the moment or opportunity to hit the ball as desired will be lost.

3. Research Methods

Methodology in this research is experimental. These were 2 experimental groups with diverse treatment. First group learned sepaksila with a rattan ball, while the second group learned sepaksila with a kenchi ball. Differences in learning results can be determined by experiment the 2 groups with the sepaksila takraw test.

The population in this research was all 50 female students who learn the sepak takraw course. The sample in this study was 30 female students taken using a purposive sampling technique with the sample criteria being not sepak takraw athletes. The sample studied takraw two times a week for three months (18 meetings).

Instruments to scale or determine the indications and characteristics of the variables studied. The important thing is that the instrument must meet the criteria for being a fine implements. Sugiyanto (1993:66), states that, "A measurement instrument is said to be good if it meets the criteria: the measurement instrument must be valid, reliable, easy to administer and have assessment norms."

The data collection technique in this research is by testing research variables. The tests accustomed are: 1. Reaction Speed Test 2. Sepaksila Skills Test.

Research Result

The description of the results of the sepaksila takraw ability data in the 2022/2023 UNIMED PKO-FIK student lecture activities as a group is presented in table form as follows:

Table 1 . Descriptive Data on Sepak Takraw Ability According to Research Group.

Item	Reaction Speed	Statistics	Initial Test	Final exam	Enhancement
Rattan Ball	High(B1)	Total	162	238	76
		Average	20.25	29.75	
		elementary school	3.69	3.69	
	Low(B2)	Total	65	134	69
		Average	9.28	19.14	9.86
		elementary school	2.21	2.85	
Kenchi Ball	High(B1)	Total	156	148	-8
		Average	19.5	17.4	3.0

	elementary school	4.07	1.3	
	Total	67	82	15
Low(B2)	Average	9.57	11.71	
	elementary school	2.76	1.38	

According to the description of the data, the conclusion of the rattan ball and kenchi ball learning methods at the level of reaction speed show:

1. When collate between the groups that admitted the learning action for precepts using a rattan ball and kenchi ball methods, it shows that the group learning for precepts using the rattan ball method was in the high reaction group. Increased by 76 with an average pre-test and post-test ratio of 20.25 : 29.75. Meanwhile, the expande in the kenchi ball group was -8 with an average pre-test and post-test ratio of 19.5: 1.4
2. When collate between the groups that admitted the treatment of learning sepak takraw using the rattan ball and kenchi ball methods, it shows that the group that learned sepak takraw using the rattan ball method in low reaction group. There was an expand of 69 in the rattan group with an average pre-test and post-test ratio of 9.28; 19.14. Meanwhile, the expand in the kenchi ball group was -8 with an average pre-test and post-test ratio of 19.5: 17.4, meaning there was a decrease in average ability.
3. If we compare the high reaction kenchi ball sepaksila group with the low reaction rattan ball sepaksila group, it is known that the high reaction rattan ball sepaksila group has an average of 0.18 with an average of 0.185. The pre sila sepak takraw low reaction kenchi ball group was 0.227 with an average of 163 on the rattan ball, meaning that the high reaction kenchi ball group had an average of better than the low reaction kenchi ball group pre sila sepak takraw group.
4. If we compare the high reaction sepaksila kenchi group with the low reaction sepaksila kenchi group, it is known that the high reaction sepaksila kenchi group has an average of 0.285 with an average of 17. The low reaction sepaksila kenchi group has an average of 17. 0.246, with an average takraw sila ability of 11.71.

4. Discussion

1. Differences in the Effects of Rattan Balls and Kenchi Balls on the Learning Outcomes of Sila Sepaksila.

From the statistic results, it is acquired that -p 0.000 < 0.05, this can be terminated that H_0 is rejected and H_a is accepted, which means that there is a difference in the influence of the height of the Rattan Ball on the results of playing sepaksila ($t_{count} > t_{table}$) 4.900 > 2.048. The data results show that rattan balls are better than kenchi balls. The reason is, with the rattan ball method, the ball is similar to a takraw ball, apart from that swinging and controlling the ball is easier because the ball can bounce according to the direction and force given to the ball, thus allowing students to play. On the other hand, controlling a kenchi ball is more difficult than a rattan ball because kicking the ball requires more force than kicking a rattan ball. Apart from that, when the kenchi ball is kicked, sometimes the direction cannot be controlled and the ball falls slowly, unstable/normal.

2. Differences in the Effect of High Reaction Speed and Low Reaction Speed on the Learning Outcomes of Precepts.

From the statistic results acquire -p 0.000 < 0.05, it can be conclude that H_o is rejected and H_a is accepted, which means there is a difference in the influence of rattan balls and kenchi balls on learning outcomes. takraw please. ($F_{count} > F_{table}$) 6.991 > 2.048). The result from this study show that female students who have high reaction speed are better at doing the cross-legged sepaksila than female students who have low reaction speed. Female students who have high reaction speed will be able to coordinate takraw movements quickly and precisely more good to direct and control the ball good. It can be concluded that high reaction speed is required by every takraw athletes.

3. Interaction of Reaction Speed with Sepaksila Principles Ability

From the statictic results obtained -p 0.000 < 0.05, H_o is rejected and H_a is accepted, which means there is an interaction in the middle of rattan ball and the ability to play sepaksila. The coefficient value of 0.661 signifies that there is 66.1% interaction. It can be explained that after carrying out statistical tests on empirical data obtained in the field, it can be said that the given reaction speed variable provides an interaction with the ability to play sepaksila.

The level of reaction speed a person has is an illustration of his ability to carry out a motion quick, as well and efficient. A person with good reaction speed is not only able to perform a skill perfectly, but can also easily and quickly anticipate all objects that are heading towards.

In this way, the importance of good reaction speed can be explained so that it can improve takraw skills, meaning that the better the reaction speed, the better the takraw skills. So every sepak takraw athlete is expected to increase their reaction speed. for good sepak takraw results.

5. Conclusions and Suggestions

Conclusion

1. There is a difference in the influence of learning rattan balls and kenchi balls on the learning outcomes of PKO FIK Unimed female students in 2022.
2. There is a difference in the influence of high reaction speed and low reaction speed on the learning outcomes of PKO FIK Unimed female students in 2022.
3. There is an interaction between learning methods and the reaction speed of PKO-FIK Unimed female students class of 2022.

Suggestion

1. Teachers/trainers need to improve their ability to evolving teaching materials, providing teaching, and managing group so that they can continue to improve the quality of learning.
2. To improve takraw learning outcomes, apart from applying suitable learning methods, athlete should also pay attention to the grade of reaction speed.
3. Teachers and trainers are expected to be able to use the rattan ball learning model with kenchi to advance takraw learning outcomes.

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