

Kinestetik: Jurnal Ilmiah Pendidikan Jasmani 7 (3) (2023)

Kinestetik: Jurnal Ilmiah Pendidikan Jasmani



DOI: 10.33369/jk.v7i3.27581



Special Technical Ability of Pontianak Takraw Athletes

Wiwik Yunitaningrum¹

¹Physical Education, Universitas Tanjungpura, Kalimantan, Indonesia

Article Info

Article History:

Received: May 2023

Revised : September 2023 Accepted : September 2023

Keywords:

Abilities, Sepak Takraw, Special Techniques,

Abstract

This study aims to provide a real description of the special skills of Pontianak athletes' sepaktakraw, namely service and smash skills which are special techniques that are very important in the game of sepaktakraw where this technique can make a maximum contribution to the acquisition of points when competing. The description of the results of this special skill can be used as input for athletes, coaches, coaches to always pay attention in the coaching and training process. The sepak takraw game itself is a game that has been competed at the regional, national, regional and international levels. PSTI is the parent organization of sepaktakraw, sepaktakraw achievements, especially in Pontianak, still need intensive coaching, athletes' achievements that have not been maximized at the national level need special attention for coaches, coaches, and athletes. Mastery of basic engineering skills and special techniques needs intensive attention. The preparation of an exercise program requires accurate data to be able to provide the right treatment in the training process. It is important that there is preliminary data related to the level of special skills mastered by Athlete sepak takraw Pontianak. This study presents service and smash skills data with a total of 30 research athletes conducted in Pontianak. From the measurement test results for service Athletes who got the very high category were 3 (22.5%), high category 6 (20%), medium category 11 (37%), low category 8 (27%), and very low category 2 (7%). Smashes of very high category totaled 3 (10%), high category 9 (30%), medium category 13 (43%), low category 5 (17%), and very low category 0 (0%).

*Corresponding email : wiwik.yunitaningrum@fkip.untan.ac.id

ISSN 2685-6514 (Online) ISSN 2477-331X (Print)

INTRODUCTION

A sport that developed in 1970, 48 years ago, a sport that became popular and familiar to Indonesian people. This sport continues to grow, starting with achievements at the 2011 SEA Games held in Indonesia, namely Jakarta and Palembang. Out of the six numbers competed, the Indonesian team was ranked 2nd after Thailand by winning gold and silver medals, the first gold medal in 40 years. In 2018, for the first time in history, the sepaktakraw team won a gold medal in the Asean Games Men's Quadrant. In 2023 Indonesia made another achievement at the Cambodia Sea Games by winning gold medals in the men's team number and men's double event.

The best achievement must start from good and correct practice. Exercises that are based on existing training principles and are carried out in the right and creative way will help create skilled and mature takraw athletes. The heart of implementing good takraw practice starts from the family, community, sports teacher and takraw sports club. Institutions that specifically develop the sport of takraw in a more focused and sustainable manner are takraw sports clubs. The takraw sports club has a strategic role in providing good practice. Sepaktakraw is a modern traditional sport that has been modified and recognized worldwide. Football. Training is a physical movement and / or mental activity that is carried out systematically and repeatedly over a long period of time, with a progressive and psychological increase in body weight so that at the time of doing sports activities can achieve optimal performance (Pambudi Sulendro, 2021). The need for special attention is related to exercise patterns that must meet standards. Physical condition is very necessary to support achievement. In addition, the exercise factor is a systematic training process. carried out repeatedly and continuously increasing the training load such as from easy to more difficult (Ardhi & Asim, 2022). Takraw or volleyball is a sport that is widely known in Indonesia Asia and becoming more popular all over the world, (Nizam, & Sugiyanto, 2018), Along with the development of the sport of sepak takraw at this time it is not only competed 3 against three but is divided into four numbers that are contested, namely two against two, three against three, four against four and also hoop Takraw, (Ardiansyah & Bulqini, 2020)

Achieving high performance in sports requires integrated and continuous preparation between physical, technical psychological elements. importance of the training process in supporting sports achievement is an important variable in development. Exercises must be properly scientifically designed developed. The movements made by sepak takraw players must require physical conditions and techniques that are high enough, therefore to become a good takraw player requires various physical components (Saripin et al., 2016). Sepak takraw is a sport that uses physical activities and demonstrates the ability of movement. A review of motor behavior suggests that motor freshness and physical freshness have a great influence on physical activity performing movement skills (Azwan et al., 2015). In carrying out basic sepak takraw techniques, of course, there are dominant physical aspects in each basic technique, through measuring physical aspects including strength, endurance, speed, coordination, reaction, balance, agility and flexibility as well as skills in playing sepak takraw serve, pass and smash (Hidayat et al., 2020). In addition, it must be designed and developed as

creatively as possible to increase the effectiveness. efficiency attractiveness of the exercise. Exercise is a process or effort to improve physical quality that aims to improve the appearance of sports. The purpose of the exercise itself is to make athletes skilled at performing the various techniques needed in sports (Nugraha et al., 2018). The training process carried out must be based on the profile of the athlete's abilities, both technical and physical. All sports, whether group or individual, are influenced by intrinsic (from within the body) and extrinsic (surrounding environment) factors which greatly influence the success sporting of performance, these factors include technique, tactics, mental, physical, anthropometric and others, one of which is the sepak takraw game. who must master the basic techniques of playing. (Hidayat et al., 2020). Some aspects that must be considered in the process of talent scouting in the sport of sepak takraw are biometric quality, motor capacity, and psychological capacity (R. Hidayat et al., 2020) Mastery of basic must be done through techniques systematic practice, repeated regularly, paying attention to the principles of training (Yunitaningrum & Hanif, 2021).

The sport of takraw has very specific characteristics compared to other sports, this sport contains elements of acrobatics. A team of sepak takraw called regu consist of three positions namely tekong, feeder and spiker (Kosni et al., 2018). In the past, Sepak Takraw or Sepakraga was only used as a filler in spare time and to welcome ceremonies from the kingdom. Over time, the game of Sepak Takraw has become a game that is competed in prestigious competitions that can make players try to be the best. Sepak takraw is a skill ball game, which requires the use of the feet and head to keep the ball in the air and in a targeted direction. Sepak takraw or kick volleyball is a sport native to Southeast Asia, resembling volleyball, except that it uses a rattan ball and only allows players to use their feet and head to touch the ball (Maseleno & Hasan, 2014). States that sepak takraw game uses body parts such as head, shoulders, back, chest, thighs, legs, but not the hands. Sepak takraw is a powerful high-powered team game where it takes players who are physically healthy, strong and expert in techniques especially the lower body (Sari, 2020). A sporting achievement can be achieved, if it meets components such as: athletes who are very potential, then fostered and directed by the coach, good training facilities and infrastructure, the needs and welfare of athletes who need attention from the coach / management of the parent sports branch, and existence of a try out to be used as an evaluation of coaching results (Riskita et al., 2019). The game of sepaktakraw is a sport that has a high level of difficulty where in this sport you play the ball with one foot and the ball cannot fall to the floor. This game is done with several touches, namely the head, feet and shoulders can only be done alternately and only 3 times. Each team in the game means that this sport must have a high level of balance and coordination of motion Sepak takraw players must have good skills and abilities, to produce a good game as well. This means that in order to play sepak takraw well, a player must master the basic techniques in the game of sepak takraw (Arrazi & Hakim, 2021)

The sport of sepak takraw is a sport that is very complex in its playing, we are required to move quickly when taking balls that are far from our bodies, jumping when blocking and smashing.(Pratama, 2018). (Azwan et al., 2015). Sepak takraw is a sport that uses physical activity and demonstrates the ability of

motion. (Sari, 2020) Basic and special technical skills in the sepak takraw game are skills that must be mastered by an athlete in order to win in a sepak takraw match. To be able to play takraw, basic skills need to be mastered for every takraw player to give the best game in attack and defense (Hananto, 2015). Hanif, (2015) stated that the skills of mastering the game of takraw are in the form of special or advanced techniques including passing, kicking, blocks and smashes. Specific techniques of playing sepak takraw are ways of playing sepak takraw which include starting football, receiving starting football, passing, smash, and blocking or holding. Without mastering these techniques, the game of sepak takraw is impossible to be carried out properly and perfectly (Damara, 2016). Sepak takraw players must master basic techniques as well as special techniques, mastery of technique by an athlete is vital in supporting athlete achievement, the basic techniques of sepak takraw include kicks, heading, thighs, turtles, smashes, kicks. Special techniques or advanced (special) techniques that must be mastered by a sepaktakraw athlete include:service, and the smash of these two techniques is very dominant in contributing points in the game, these two techniques are used as attacks to be able to produce numbers. The game begins with a serve, which is performed by a tekong into the opponent's field area. This sepak takraw game begins with the start of the football carried by Tekong to the opponent's field area. Instead, the opposing player tries to play the ball using his feet and using other limbs except the hands, with three touches alternately or done by one person (Ilham, 2021). Then the opposing team players try to play the ball using their feet, head and limbs other than hands, as many as 3 touches (Syah et al., 2020). A player in addition to having basic technical skills

must also have special techniques, one of which is the technical serve of sepak takraw. Serve is the most important work movement in the game of sepak takraw, Service is said to be one of the most important special techniques in the game of sepak takraw because the number will be obtained by the team that serves. With a serve, a team can produce the opposite number: If a team or team fails on the serve, of course, it will eliminate the number that will be obtained if the service is successful and the number from the service results will be obtained by the opposing party. Sepak Takraw serves are necessary in achieving victory because the winner in a sepak takraw match is determined by a predetermined number of points in a predetermined amount of time. Service technique is an important way of working, because numbers or points can be obtained by the team performing the service. Conversely, failure to serve, then the opportunity for the team to get points or points has failed, or the team that has failed has given the opposing team the opportunity to make points or points (Ardiansyah & Bulqini, 2020).

Servis sepak takraw One of the basic techniques in the sport of sepak takraw is smash. Without neglecting other basic techniques, smash is a basic technique that is often used in sepak takraw matches because it is very effective in turning off the ball and in obtaining points / numbers (Pratama et al., 2017). Of the techniques found in the game of sepak takraw, the most important technique and is a technique that is very difficult to learn is the smash technique (attack) (Syaifuddin, 2020). Smash in the sepak takraw game divided into 3 parts, namely Smash Kedeng, Gunting Smash, Salto Smash. In the sepak takraw game, all players have the opportunity to contribute points either through serves, smashes with their feet or head, but

smashes are a special technique that can effectively contribute points, Likewise with service. In the game sepak takraw service is the movement of moving the ball towards the opponent's field by kicking, using the inside of the foot, back and outside of the foot (Abdul & Hanif, 2020). One way to improve athletes' service abilities is by implementing training using. The overall method is carried out in stages to produce effective and efficient movements.

There are several ways to smash, including cross smash, straight smash, sole of the foot smash and cross smash, which need to be learned and mastered if you want to become a sepak takraw player, (Semarayasa, 2014). benchmark for smash success is if the ball can cross the net and enter the opponent's playing area, where the opponent is unable to receive the ball from the smash attack. Sepaktakraw is one of the branches competing at the Provincial Sports Week (PORPROV) event in West Kalimantan. West Kalimantan PSTI is the organization parent that conducts coaching through sports clubs. In particular, the development of takraw in West Kalimantan has not shown maximum performance, this is due to the uneven supply of athletes at the provincial level, which is still dominated by certain regions. The city of Pontianak is one of the barometers of development in West Kalimantan, the 2018 Porprov Event Pontianak city won 3 gold medals from the 4 branches that were contested, however. there were still presentations of failure in the game, especially in service and smash. This achievement cannot be separated from the role of the coach in preparing the athletes both physically, tactically, and mentally. Training is a process for preparing athletes to improve higher performance. (Hidayat, 2015). A trainer in preparing athletes for an event requires initial data on the athlete's condition, both technical skills, physical condition and mental readiness. The initial stage requires accurate data as a reference in preparing the training program according to the specified time target. Based on the of observations made researchers at this time there is no valid data related to special technical skills during coaching and training carried out, the research carried out is important as an illustration of the condition of special technical skills so that the data can later be used as recommendations in preparing training programs.

METHODS

This research is quantitative descriptive research, the method used is a survey with test and measurement techniques in accordance with the Sepak Takraw branch. As for the data collection technique with tests, the tests used to obtain data are tests of kick ability (service) and smash ability. The data analysis technique used in this research is descriptive statistics with percentages, where the data describes the level of service and smash ability of the sepak takraw athletes.

Participants

According to (Sugiyono, 2018), says "population is a generalization area consisting of: objects/subjects that have certain qualities and characteristics set by researchers to study and then draw conclusions". Meanwhile, according to Suharsimi Arikunto (2014) states, "the population is also the whole or research subject". From some of the opinions of the experts above, the authors conclude that populations are objects or subjects that have the same characteristics, whether in the form of members of human groups, incident animals, or objects that live together in a place which ultimately

becomes a conclusion in the study. The population of this study is the Pontianak city of Sepaktakraw Athletes.

Sampling Procedures

In research, a sampling technique is needed. According to Sugiyono (2018), "sampling technique is a technique or method of taking samples". The sample in this study The sampling technique in this a technique saturated used study sampling. According to (Sugiyono, 2018). "saturated sampling is a sampling technique when all members are selected as a sample. This is often done when the population is relatively small, less than 30 people, or this research wants to make generalizations with very small errors. So in this study the researchers took takraw athletes from Pontianak city with a total of 30 athletes.

Materials and Apparatus

Sugiyono (2015), states "data collection techniques are the most important step in research, because the main goal of research is to obtain data". The data collection technique that will be used in this study is to carry out measurement tests as follows:

- 1. Athlete's service skill test in Pontianak City.
- 2. Pontianak City Athlete's smash takraw skill test.

The instrument used to measure the success of serves and smashes is to perform this basic technique with a frequency of 10 times making movements if the points are entered according to the fall of the ball.

Design or Data Analysis

The data analysis technique used in this study is percentage descriptive statistics. Descriptive statistics in this study to describe the level of ability service and smash. The data obtained for each test item is raw data, then the raw results are converted into values by consulting the raw data from each test item that has been achieved by athletes with very high, high, medium, low, very low classifications.

The data analysis technique in this study was taken from data on the skill level of playing takraw through service and smash skills tests, each of which was given the best opportunity. Categorization uses the Mean and Standard Deviation. According to Sudarno (2015) to determine score criteria using the following table:

Table 1. Assessment

Interval	Category
M+1,5 SD > X	Very high
M+ 0,5 SD < X≤ M+ 1,5 SD	Height
M - 0,5 SD < X \le M+ 0,5 SD	Currently
$M-1,5 SD < X \le M-0,5 SD$	Low
X≤ M- 1,5 SD	Very low

RESULT

Description of research data provides an overview of special service and smash technique skills in Pontianak city sepaktakraw athletes. The results of the service skills and smash tests are described based on the tests that have been carried out. The results of research data analysis can be seen in the following table:

The results of sepaktakraw service skills

Table 2. Statistics of pontianak city athlete's service sepak takraw service data

Skills	N	Rate-	Standard
		rate	deviation
Service	30	83	3

Based on the norm table above, the results of the Pontianak city sepaktakraw athlete service skills test are as follows. The following is a frequency distribution table.

Table 3. Frequency distribution of service tests in sepak takraw athletes in pontianak city.

Interval	F	P	Criteria
X>87	3	10%	Very high
84 <x<87< td=""><td>6</td><td>20%</td><td>Height</td></x<87<>	6	20%	Height
81 <x≤84< td=""><td>11</td><td>37%</td><td>Currently</td></x≤84<>	11	37%	Currently
78 <x≤81< td=""><td>8</td><td>27%</td><td>Low</td></x≤81<>	8	27%	Low
X<78	2	7%	Very low
Total	30	100%	

From the table above it can be explained that of the 30 athletes who received a very high category there were 3 (10%), high category 6 (20%), medium category 11 (37%), low category 8 (27%), and very low category 2 (7%)

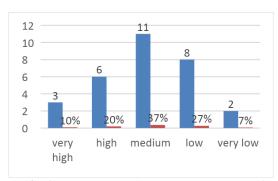


Fig 1. Frequency Diagram, Percentage of Sepak Takraw Service Skills

Smash Sepak Takraw Skill Results

Table 4. Data Statistics of Smash Sepak Takraw Athletes of Pontianak City

Skills	N	Rate- rate	Standard Deviation
Service	30	75	5

Based on the norm table above, the results of the Pontianak City Sepaktakraw Athlete service skills test are as follows. The following is a frequency distribution table:

Table 5. Smash Test Frequency Distribution of Pontianak City Sepaktakraw Athletes.

Interval	F	P	Criteria
X>83	3	10%	Very high
78 <x≤83< td=""><td>9</td><td>30%</td><td>Height</td></x≤83<>	9	30%	Height
72 <x≤78< td=""><td>13</td><td>43%</td><td>Currently</td></x≤78<>	13	43%	Currently
67 <x≤72< td=""><td>5</td><td>17%</td><td>Low</td></x≤72<>	5	17%	Low
X<67	0	0%	Very low
Total	30	100%	

From the table above it can be explained that of the 30 athletes who received very high categories, there were 3 (10%), high categories 9 (30%), medium categories 13 (43%), low categories 5 (17%), and categories very low 0 (0%).

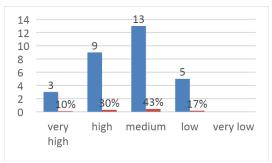


Fig 2. Frequency Chart, Percentage of Smash Sepak Takraw Skills

DISCUSSION

The research aims to provide a real picture related to the level of service and smash skills in Pontianak city athletes. According to Widiastuti, (2011: 196) movement skills are: "a series of movement patterns that follow a certain pattern or form by coordinating and controlling part or all of the body which is usually done through the learning process". Mulyono states, (2017: 54) skills are "effective and efficient achievement of goals which are carried out consistently". Iryakus (2012:26).

Serving in the game of sepak takraw is the initial movement to start the game, which is a series of movements consisting of preparation, leg swing, ball contact movement, and follow-up motion. According to hanif, (2015:49)smash is a series of movements consisting of: (1) initial attitude, (2) moment of repulsion, (3) momentsmash (when the body is above).

Based on the results of the research on the level of service ability and in the moderate category, several influencing factors include: on service, namely body position, slow leg swings, ball impact when the ball is impacted, the ball is not hit, the ball bounces are not appropriate. Errors when carrying out the smash movement, inappropriate footwork coordination, non-maximum (low) jumps so that the foot reach is also low which results in the ball not crossing the net, leg swings during the smash are not optimal where the angle between the fulcrum and swinging leg is very small which has an impact on the ball goes out of the field, hits the ball that is not appropriate, the blow has not been directed at the target, apart from this the physical condition factor also affects the results of service and smash skills such as repulsion which must be supported by leg muscle strength, maximum reach supported by good flexibility, agility supports the speed of movement when doing steps.

CONCLUSION

After obtaining the data from the research results and referring to the discussion above, it can be concluded that the level of special technical skills of the pontianak city athlete in the service skills in the very high category is 3 (22.5%), the high category is 6 (20%), the medium category is 11 (37). %), low category 8 (27%), and very low category 2 (7%). The smash skill level in the very high category

was 3 (10%), high category 9 (30%), medium category 13 (43%), low category 5 (17%), and very low category 0 (0%).

REFERENCES

- Abdul G, & Acmad S, H, J. (2020). Sepak Takraw Double Event.
- Ardhi, D. S., & Asim, A. (2022). Profil Kondisi Fisik Atlet Sepak Takraw MTC (Malang Takraw Club) Kota Malang. Sport Science and Health, 2(4), 247–253. https://doi.org/10.17977/um062v2i4 2020p247-253
- Ardiansyah, R. T., & Bulqini, A. (2020). Terhadap Hasil Akurasi Servis Pada Tekong Atlet Sepak Takraw Smanor Jawa Timur. 3(1).
- Arrazi, F., & Hakim, A. A. (2021).

 Pengaruh Latihan Smash Bola
 Gantung Terhadap Tinggi Lompatan
 Atlet Sepaktakraw Pada Klub Asam
 Jaya. Jurnal Kesehatan Olahraga,
 9(1), 9–14.
 https://ejournal.unesa.ac.id/index.ph
 p/jurnal-kesehatanolahraga/article/view/36409
- Azwan, M., Ramadi, & Juita, A. (2015). the Correlation of Eye and Foot Coordination With Sila Football Skill in Game of Sepak Takraw At Pplp Riau Team 2015. x, 1–9.
- Damara, H. D. (2016). Hubungan antara Kecepatan dan Kelincahan Terhadap Kemampuan Smash Kedeng dalam Permainan Sepak Takraw pada SMA Negeri 8 Kediri Tahun Ajaran 2015/2016. Artikel Skripsi Universitas Nusantara PGRI Kediri.
- Hananto, H. P. (2015). Melatih olahraga dan sepak takraw.
- Hanif, A, S. (2015). Sepaktakraw Untuk Pelajar. raja grafindo persada.
- Hidayat, A. (2015). Pengaruh Latihan Bola Gantung Terhadap Peningkatan Hasil Servis Bawah Pada Permainan Sepak Takraw. Seminar Nasional

- Pendidikan Olahraga (SEMNASPOR) 2015, 117–122.
- Hidayat, R., Budi, D. R., Purnamasari, A. D., Febriani, A. R., & Listiandi, A. D. (2020). Faktor Fisik Dominan Penentu Keterampilan Bermain Sepak Takraw. Jurnal MensSana, 5(1), 33. https://doi.org/10.24036/jm.v5i1.12
- Ilham, A. (2021). Pengaruh Latihan Single Leg Bound dan Split Jump Terhadap Kemampuan Servis Punggung Sepak Takraw. Journal of Physical Activity and Sports (JPAS), 2(1), 12–20. https://doi.org/10.53869/jpas.v2i1.4
- Kosni, N. A., Abdullah, M. R., Juahir, H., Maliki, A. B. H. M., & Musa, R. M. (2018). Establishing reliability of performance indicator of sepak takraw using notational analysis. Journal of Fundamental and Applied Sciences, 9(2S), 1. https://doi.org/10.4314/jfas.v9i2s.1
- M Syaifuddin, A. H. A. (2020). Profil Kondisi Fisik Atlet Sepak Takraw Putra Asian Games 2018 dan UKM Unesa. Jurnal Kesehatan Olahraga, 8(1), 155–160.
- Maseleno, A. & Hasan, M. M. (2014). Dempster-shafer theory for move prediction in start kicking of the bicycle kick of sepak takraw gameNo Title. 1–12.
- Nizam, K. & Sugiyanto, F. (2018). The influence of ball modification on sepak takraw service learning outcome. Advances in Social Science, Education and Humanities Research.
- Nugraha, D. C., Hanief, Y. N., & Or, M. (2018). Artikel Pengaruh Latihan Plyometric Depth Jumps Dan Triple Jumps Terhadap Peningkatan Power Otot Kabupaten Blitar Oleh: Dibimbing Oleh: Program Studi

- Fakultas Penjaskesrek Universitas Nusantara Pgri Kediri Surat Pernyataan Artikel Skripsi Tahun 2018. 02(04).
- Oktora Yogi Sari, I. Z. A. (2020). A new decade for social changes. Technium Social Sciences Journal, 9, 228–297. https://techniumscience.com/index.php/socialsciences/article/view/332/1 24
- Pratama, B. A., Pd, M., Hanief, Y. N., Or, M., Studi, P., Jasmani, P., & Dan, K. (2017). Pengaruh Latihan Split Jump Dan Knee Tuck Jump Terhadap Power Otot Tungkai Di Team Sepak Takraw Sman 1 Mojo The Influence Of Split Jump And Knee Tuck Jump Exercise Toward Leg Muscle Power In Sepak Takraw Team Sman 1 Mojo Oleh: Fahrizal Trivanaro Dibimbin.
- Pratama, D. S. (2018). Pengaruh Metode Latihan Box Jump Dan Panjang Tungkai Terhadap Hasil Smash Pada Atlet Sepak Takraw Pplp Jawa Tengah. Jendela Olahraga, 3(1), 41–47.
 - https://doi.org/10.26877/jo.v3i1.203
- Riskita, A. V., Bulqini, A., & Wijaya Kusuma, I. D. M. A. (2019). Hubungan Kelincahan Dan Keseimbangan Terhadap Hasil Receive Pada Atlet Sepak Takraw Putri Puslatda Jawa Timur. JSES: Journal of Sport and Exercise Science, 2(2), 44. https://doi.org/10.26740/jses.v2n2.p 44-48
- Rizky D, A, P, & Sugeng Sulendro. (2021). Pengaruh Latihan Drill Servis Terhadap Ketepatan Servis Samping Olahraga Sepak Takraw PSTI Panggul Trenggalek. SPRINTER: Jurnal Ilmu Olahraga, 2(2), 172–179. https://doi.org/10.46838/spr.v2i2.12
- Saripin, D., Pd, S., Juita, A., Pd, S., & Pd,

- M. (2016). Relations With Foot-Eye Coordination Skills in Sila Kick Takraw Team At Senior High School Plus. 1–10.
- Semarayasa, I. K. (2014). Pengaruh Strategi Pembelajaran Dan Kemampuan Gerak Dasar (Motor Terhadap Kemampuan Ability) Smash Silang Pada Permainan Sepak Takraw Mahasiswa Penjaskesrek Fok Undiksha. JPI (Jurnal Pendidikan Indonesia), 3(1), 372https://doi.org/10.23887/jpiundiksha.v3i1.2919
- Sugiyono. (2018). Metode Penelitian Kuantitatif, Kualitatif Dan R&D.
- Syah, H., Mandalika, U. P., Melakukan, S., Splite, L., Ketepatan, T., Sepak, S., Dalam, S., Sepak, P., Sasaran, K., & Service, S. (2020). Pengaruh Latihan Split Terhadap Ketepatan Sasaran Sepak Service dalam Permainan Sepak Takraw pada Team Regu Putra UNDIKMA Mataram 2020. 1(2), 41–46.
- Wiwik, Y, & Ahmad S. H, (2021). Keterampilan Smash Sepak Takraw. Cv.aa.rizky.