



Effect of Service Training on Drill Methods And Target Methods on Improving Service Skills For Volleyball

Ruslan^{1*}, Gilbert Sandy², Nurjamal³, Hendry Ismawan⁴

Department of Teacher Training and Education, Universitas Mulawarman, Samarinda, East Kalimantan Province, Indonesia

^{1*}ruslan@fkip.unmul.ac.id, ²gilberd.sandy@gmail.com, ³nurjamal.unmul@gmail.com,

⁴hendry.ismawan@gmail.com

Received: June 3, 2021; *Reviewed:* July 1, 2021; *Accepted:* August 21, 2021;

Published: October 28, 2021

ABSTRACT

This study aims to determine the effect of service training on the drill method and the method of using targets on improving service skills for volleyball athletes at Gajah Mungkur Club of Samarinda. This type of research is an experiment with descriptive statistical test techniques, inferential statistics, normality tests, homogeneity, and percentage improvement. The population of this study was all female athletes at the Gajah Mungkur Club of Samarinda. Sampling using saturated sampling technique, which is divided into 2 groups, namely drill practice and practice using targets, each group consists of 13 people so that the total number of samples in this study amounted to 26 people. The results showed that there was an effect of the drill method training and the method using the target on the top service results for the athletes of Gajah Mungkur Club of Samarinda which obtained a significant t value = $0.028 < t$ statistic = 0.05 with a percentage increase of = 33.98% . There is a difference in the effect of the drill method training, which has a value of = 0.360 belonging to the moderate category, and the training method using the target which is obtained by the value = 0.260 belonging to the low category on the top service results of the athletes of the Gajah Mungkur Club of Samarinda. The conclusion is that there is a significant effect of service training on the drill method and the target method on improving service skills for volleyball for the Gajah Mungkur club athletes of Samarinda.

Keywords: Drill Method; Target Method; Top Service; Volleyball.

INTRODUCTION

Volleyball in today's era has developed rapidly (Saptiani et al., 2019), volleyball is one of the team games favored by the Indonesian people, including the people of Samarinda, both the general public and beginners. There have been many institutions that have held volleyball championships, the whole community is expected to be able to carry out volleyball coaching including in clubs (Arianto, 2016). Serving as the initial stroke to get points in the game needs (Iskandar, 2014) to be truly mastered by athletes and top service is one of the services which is often used in matches (Prabawa et al.,

2019). Therefore, mastering the serve well is very important, top serve requires more coordination, timing, and strength (Noerjannah & Sudijandoko, 2016, Anggraini & Afrizal, 2019). Since the throw is the key to success, a ball that is thrown too high or too low, too far forward or backward (Sahabuddin, 2020), or too far to the side will force the player to "chase" the pitch and move out of the sequence before proper contact (Ilkamto & Saputra, 2020).

Due to the lack of variety of exercises that can improve service technique skills (Sudibyo et al., 2020) and it is necessary to add training methods to improve top service skills in playing volleyball (Ramadhan & Hidayat, 2020). Therefore the authors are interested in researching how to do exercises to improve service skills in volleyball (Jaya et al., 2019). By trying to provide service training on the drill method and the method using the target, especially for junior female athletes at the Gajah Mungkur Club, Samarinda. Coaching in training, sometimes is still not enough and will affect the athlete, for this reason in increasing sporting achievement (Pratiwi & Prayogs, 2019), it is necessary to seek direct and continuous coaching through talent scouting, education, and sports training based on science effectively and efficiently as a means of achieving achievement (Astuti, 2017).

Athletes are said to be good, if they can master basic techniques correctly (Falid & Hidayat, 2016), to enable high achievement to be achieved, as for the factors that influence, namely strength, coordination, flexibility, and target accuracy, in this case, emphasizes service training on the drill method and methods of using targets against basic top serve technique (Latta, 2015, Samsudin, 2017). The whole program must be planned in stages so that the development of skills, biomotor abilities, and mental aspects can develop systematically, methodically, and planned, the basic techniques of volleyball are closely related to defense and attack tactics and strategies (Sahabuddin, 2018). The main basic techniques in volleyball include service techniques, passing techniques, ball hitting techniques, and blocking techniques (Widhiasto et al., 2020). service is the initial attack, therefore every player who serves will try to make a service ball that kills the opponent, such as fast, hardball speed, aiming at empty areas, aiming at weak players, not mastering passing or so on (Ramadhan & Hidayat, 2020). Passing is controlling the ball and passing the ball to a player or teammate (Ruslan, 2021). Hitting the ball or spike is the main skill used to play the ball over the net, the ball can be hit in several different ways depending on the speed and level of the pass, the position of the blocking player (Ilkamto & Saputra, 2020), and the opposing defender and, the situation of the match

(Ratimiasih, 2021). Blocking is a defensive skill used to stop or slow down an opponent's attack in the net area. And the forwards have the right to block the opposing team's beatings (Suaidah et al., 2020).

Serves as the initial stroke to get points in the game (Iskandar, 2014), for that it needs to be mastered by the athlete and the top service is one of the services that is often used in competitions (Nurhuda et al., 2014). Through coaching and training which is carried out systematically, it is hoped that it can improve skills in playing volleyball, especially on top services (Jaya et al., 2019). Athletes are said to be good, if they can properly master basic techniques, to enable achievement to be achieved

METHOD

This type of research uses experimental research, indirect research to conduct field research, with the sample object to be studied, Sugiyono (2018) states that experimental research aims to find the effect of certain treatments on others under controlled conditions, because of this method. as part of the quantitative method has its characteristics, especially in the presence of a control group, intending to test predetermined hypotheses. The implementation of this experimental research includes pre-test (pre-test), the practice of servicing of the drill method and methods of using targets, and post-test. Research variables are anything in the form determined by the researcher to be studied so that information is obtained about it, the research variables are conditions or serenteristics which the researcher manipulates, controls or observes in a study (Cholid Narbuko and H. Abu Achmadi, 2018). The variables to be examined in this study are Babas Variables: Service training on the drill method, Service training on the target method, Bound Variables: Volleyball service skills, Population is a generalization area consisting of objects/subjects that have certain qualities and characteristics. determined by the researcher to study and then draw conclusions (Sugiyono, 2018). The population of this study was all junior female athletes at Gajah Mungkur Club Samarinda. The sample is part of the number and characteristics possessed by this population, the sample in this study was 26 junior female athletes at Gajah Mungkur Samarinda Club, who were selected as the research sample, then divided into two groups. Regarding the research group was formed based on the results of the pretest service skills over volleyball.

RESULTS AND DISCUSSION

Descriptive Analysis This analysis is intended to obtain an overview of the research data. Descriptive analysis was carried out for pre-test and post-test data on top service skills, making it easier to interpret the results of the data analysis. The results of the descriptive analysis of the research data.

Table 1.
 Descriptive Research Results Upper Service Pretest Data

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Pre-test	26						
Valid N (listwise)	26	21	4	25	13,58	5,994	35,934

When displayed in diagrammatic form, it can be seen in the image below :

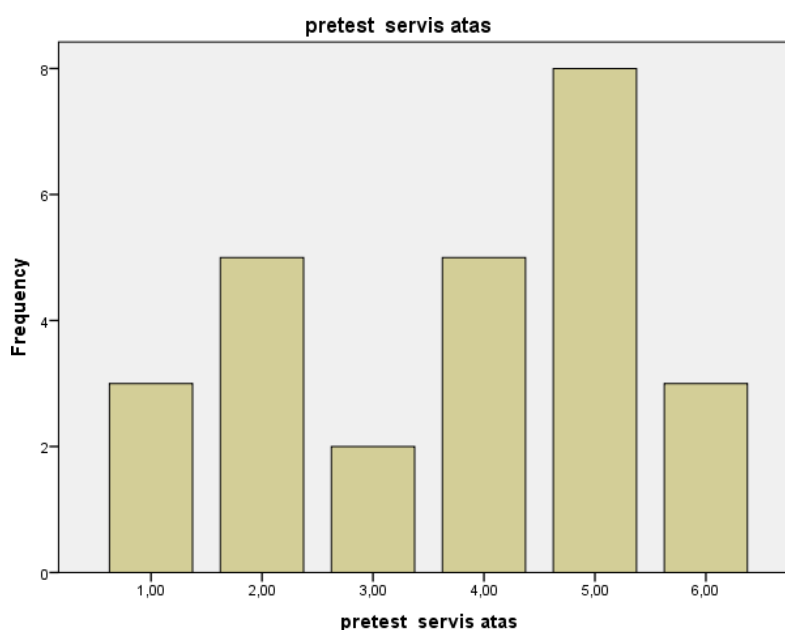


Figure 1.
 Diagram of Top Service Skills Pretest Research Results

The results of posttest research on top service on junior female athletes of Gajah Mungkur Samarinda volleyball club obtained a minimum score of 20; maximum value of 48; the average (mean) of 28.00; standard deviation (standard deviation) of 6.274 for the Drill method, the middle value (median) of 30; mode of 30; and the standard deviation (standard deviation) of 7.93 while for the method Using the target, the median value (median) is 25; mode equal to 22; and the standard deviation (standard deviation) of 2.75. The description of the results of the posttest research on top service can be seen in

the table below :

Table 2.
 Description of Research Results for Upper Service Posttest Data

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Post-test	26						
Valid N (listwise)	26	28	20	48	28,00	6,274	39,360

When displayed in diagrammatic form, it can be seen in the following figure: The criteria used to determine whether a distribution is normal or not is if $x^2_{count} < x^2_{table}$ the distribution is declared normal, and if the distribution $x^2_{count} > x^2_{table}$ is said to be abnormal. The results of the normality test of this study can be seen in the following table:

Table 3.
 Normality Test of the Drill Method

	Results	
N	13	
Normal Parameters ^b	Mean	30,31
	Std. Deviation	7,931
	Absolute	0,185
Most Extreme Differences	Positive	0,185
	Negative	-0,097
Kolmogorov-Smirnov Z	0,666	
Asymp. Sig. (2-tailed)	0,767	

From the results in the table above, it is known that the posttest data on top service at the Gajah Mungkur Samarinda Volleyball Club Women's Junior Athlete obtained a significant value in the Drill method after treatment of 0.767, which means $0.767 > 0.05$, so it can be concluded that the data obtained is normally distributed.

Table 4.
 Target Method Normality Test

	Results	
N	13	
Normal Parameters ^b	Mean	25,69
	Std. Deviation	2,750
	Absolute	0,138
Most Extreme Differences	Positive	0,138
	Negative	-0,107
Kolmogorov-Smirnov Z	0,497	
Asymp. Sig. (2-tailed)	0,966	

From the results in the table above, it is known that the posttest data on top service on the Junior Women's Athlete of the Gajah Mungkur Volleyball Club, Samarinda has a

significant value in the Using Target method after treatment of 0.966, which means 0.966. > 0.05 so it can be concluded that the data obtained is normally distributed.

The homogeneity test was carried out to determine whether the samples used in the study came from the same variance or not. The homogeneity test was carried out using the Spss 22 program. The homogeneity test was determined by the significance level (sig), if the value (sig) > 0.05, then the data was declared homogeneous, if the sig value < 0.05 then the data was declared not homogeneous. The homogeneity test was carried out on the athlete's pretest and posttest data.

Table 5.
Homogeneity Test Results

Levene Statistic	Df1	Df2	Sig.
5,459	1	24	0,197

Based on the above calculations, it is found that the significant value is 0.197 > 0.05, so it can be concluded that the data used in the study is homogeneous or comes from the same variance.

The t-test was carried out to determine whether there was an effect of service training on the Drill method and the Using Target method on the results of the top service on the Junior Women Athlete of Gajah Mungkur Volleyball Club Samarinda. The t-test results can be seen in the following table:

Table 6.
Independent Samples t-Test Results

	Metode	N	Mean	Std. Deviation	Std. Error Mean
Upper Service	Drill	13	30,31	7,931	2,200
	Target	13	25,69	2,750	0,763

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Upper Service	5,45	,028	1,98	24	,059	4,615	2,328	-,190	9,420
Upper Service assumed Equal variances not assumed			1,98	14,84	,066	4,615	2,328	-,351	9,582

From the results of the t-test, it is known that the t value is significant (0.028) < t statistic (0.05), the results are interpreted as Ha: accepted and Ho: rejected, so this research hypothesis concludes that there is an effect of training with the Drill method and the Using Target method. against the over-serve on the Junior Athlete of the Gajah Mungkur Club of Samarinda Volleyball.

The Effect of Drill Method Exercises on Top Service Results

To find out the effect of the drill method training on the results of the top service for the volleyball athletes of the Gajah Mungkur Club of Samarinda, a statistical test was carried out on the pretest and posttest scores with a normalized gain index, thus calculating the percentage of increase was carried out in the following way:

Table 7.
Mean Drill

	Method	N	Maximal	Mean	Std. deviation
After	Upper	26		13,58	35,934
Before	Service	13	60	30,31	7,931
	Drill	13		25,69	2,750
	Target	13			

Based on the category table above, the value of g: 0.360 is in the moderate category, which means that the effectiveness of the drill method, increase is sufficient to affect the upper service skills in volleyball at Gajah Mungkur Club, Samarinda. The Effect of Using Target Methods on Upper Service Results To determine the effect of training The method of using the target for the top service results in the volleyball athletes of Gajah Mungkur Club of Samarinda, carried out statistical tests on the pretest and posttest scores with a normalized gain index, thus calculating the percentage of increase was done in the following way:

Table 8.
Target Mean Value

	Method	N	Maximal	Mean	Std. deviation
After	Upper	26		13,58	35,934
Before	Service	13	60	30,31	7,931
	Drill	13		25,69	2,750
	Target	13			

$$\text{Index Gain (g)} = \frac{\text{Skor posttest} - \text{skor pretets}}{\text{skor maximal} - \text{skor pretets}}$$

$$\text{Index Gain (g)} = \frac{25,69 - 13,58}{60 - 13,58}$$

$$\text{Index Gain (g)} = \frac{12,11}{46,42}$$

$$\text{Index Gain (g)} = 0,260$$

Based on the category table below, the value of g: 0.260 belongs to the low category, which means that the effectiveness of the target method of increasing only slightly affects upper service skills in volleyball at the Gajah Mungkur Club, Samarinda.

Table 9.
Acquisition Category Score

Limitation	Category
$g > 0,7$	Tinggi
$0,3 < g < 0,7$	Sedang
$g < 0,3$	Rendah

Differences in the Effect of Drill Method Exercises and Methods Using Targets on Service Results

From the statistical results of the research above, the effect of the drill method and using targets on the results of the top service for the volleyball athletes of the Gajah Mungkur Club of Samarinda, obtained the mean pretest = 13.58 and the mean (mean) posttest = 28.00 also the mean difference = 4.615. based on table 4.6, therefore, calculating the percentage increase is done in the following way:

Table 10.
Average Value (mean)

		N	Mean	Std. Deviation	Mean Defferent
Upper Service	Pretest	13	13,58	5,994	4,615
	Posttest	13	28,00	6,273	4,615

$$\text{Percentage increase} = \frac{\text{Mean Defferent}}{\text{Mean Pretest}} \times 100\%$$

$$\text{Percentage increase} = \frac{4,615}{13,58} \times 100\%$$

Percentage increase = 33,98%

To see which method is the best after treatment, namely between using the drill method or using the target method, with the following calculations:

Method drill

$$\text{Index Gain (g)} = \frac{\text{Skor posttest} - \text{skor pretets}}{\text{skor maximal} - \text{skor pretets}}$$

$$\text{Index Gain (g)} = \frac{30,31 - 13,58}{60 - 13,58}$$

$$\text{Index Gain (g)} = \frac{16,73}{46,42}$$

$$\text{Index Gain (g)} = 0,360$$

Method target

$$\text{Index Gain (g)} = \frac{\text{Skor posttest} - \text{skor pretets}}{\text{skor maximal} - \text{skor pretets}}$$

$$\text{Index Gain (g)} = \frac{25,69 - 13,58}{60 - 13,58}$$

$$\text{Index Gain (g)} = \frac{12,11}{46,42}$$

$$\text{Index Gain (g)} = 0,260$$

From the results of the above calculations, it can be interpreted that the effect of the drill method training and using targets on the top service results in volleyball athletes at Gajah Mungkur Club Samarinda is 33.98%.

Discussion

Effect of drill method training on service results for volleyball athletes at Gajah Mungkur Club Samarinda

The first hypothesis shows that there is a significant effect of drill method training on the service results for volleyball athletes at Gajah Mungkur Club of Samarinda. It is proven that the increase in percentage value = 0.360 is in the medium category, which means that the effectiveness of the drill method of increasing the increase is sufficient to affect the upper service skills. The results of this study indicate that the drill method training given for six weeks to Gajah Mungkur athletes has a significant effect on the service results of volleyball, this can be explained by the increase in service skills of

athletes due to the application of the drill method training given.

Aims to strengthen a movement of coordination or perfect a skill so that it becomes permanent. If a person has good coordination movements, it will be easier for them to perform top service techniques in volleyball, and thus can improve the ability of the athletes to serve. To serve is a consistent throwing skill and must have the power, accuracy, and coordination to hit the ball over the net using a top-handed throwing motion because top serve requires more coordination, timing, and strength. In addition, the upper service skills also increased after being given a drill training program for five meetings a week with the number of sets always increasing each week, and the number of meetings for six weeks. This is as stated by Bompa in Apta Mylsidayu and Feb Kurniawan, (2019) that the increase in training occurs within 2-6 weeks but usually 4 weeks (1 month) and according to Djoko Pekik, the core training is carried out 20-60 minutes within 3-5 times a week. Before the participants are given drill method training, it can be seen that athletes sometimes still make mistakes and have difficulty directing the ball during the top service, where sometimes the ball is not directed and comes out of the field line, the ball is not quite right, and the service ball is too direct low so it hits the net. After carrying out the initial test, participants are then given an exercise program in the drill method training group and after completing the training program, the participants return to the final test to find out how far the upper service has improved. After the student has taken the final test, it can be seen that there are some improvements in the top service, with the athlete performing the top serve without thinking about the distance to go for the ball to cross the net and the more directed serve strokes. This increase is due to the addition of sets of exercises every week and repetitions which, if done following the principles of training, will gradually increase towards the better. Aep Rohendi and H. Etor Suwandar (2018) states that the latissimus dorsi (last) is one of the most versatile muscles in the body. This muscle is responsible for shoulder extension (chin lifting), shoulder adduction (pull-down), shoulder internal rotation (arm twisting motion at the shoulder), and consider last attaches to spine, pelvis, sacrum, ribs, shoulder blades, and the humerus.

The effect of using the target method of training on service results for volleyball athletes at Gajah Mungkur Club Samarinda

The second hypothesis shows that there is a significant effect of using target method training on the service results of volleyball for the athletes of Gajah Mungkur Club,

Samarinda. It is proven that the increase in percentage value = 0.260 is in a low category, which means that the effectiveness of the increase target method only slightly affects top service skills. The results of this study indicate that the training given for six weeks to the athletes of the Gajah Mungkur Samarinda Club has a significant effect although only slightly on the service results for volleyball.

Aims to improve accuracy and consistency in performing top services, and to improve top services that are less targeted. If someone has good accuracy and determination it will be easier to perform top serve techniques in volleyball, and thus can improve the athlete's serve ability. To serve is a consistent throwing skill and must have the power, accuracy, and coordination to hit the ball over the net using a top-handed throwing motion because top serve requires more coordination, timing, and strength. In addition, the upper service skills also increased after being given a method training program using targets for five meetings a week with the number of sets that always increased each week, and the number of meetings for six weeks. Before participants are given training using the target method, it can be seen that athletes sometimes still make mistakes and have difficulty directing the ball while serving up where sometimes the ball is not directed and comes out of the field line.

Thus it can be argued that the use of target method exercises can improve volleyball service skills, this achievement can be seen that there are differences in the results of the initial test and the results of the final tests carried out so that the results of this study have a significant effect.

The difference in the effect of the drill method and the method using the target on the service results for volleyball

Based on the results of the research above, it shows that the drill method training can contribute = 0.360, which is in the medium category, which means that the effectiveness of the training in the drill method, the increase is sufficient to affect the upper service skills of the Gajah Mungkur Samarinda Club athletes, while the training method using targets can contribute as much as = 0.260 belongs to the low category, which means that the effectiveness of the training method using the target of the increase only slightly affects the upper service skills of the athletes of the Gajah Mungkur Club Samarinda. So it can be stated that the drill method training has a greater effect than the method training using the target after the treatment is carried out. Based on the purpose of the drill method, which is to strengthen a movement of coordination or perfect a skill

so that it becomes permanent and it can be seen from the results of the research that the drill method has more influence, while the method of using targets gives a weak increase because it is influenced by internal factors, namely a lack of motivation so that it is easy, boring and the external factor is the weather.

The form of the drill method given can provide an increasing training load with each exercise. The increasing intensity and frequency of the exercises given will help athletes provide increased skills in top service. In addition, the form of exercises that repeatedly do the same thing will provide training as needed and complement each other that has been carried out. The principles of training must be implemented properly during the training process. In addition, the training method is also very influential on the success of the exercises being carried out. Top service skills in volleyball are very important so that improvement should be maximally developed. Process of improvement Top serve skills, in particular, can only be improved with good practice. The training process by increasing the training load from each training session will help participants to improve their abilities to the maximum. However, on the other hand, if the training process given does not carry out the principles of good training, the results of the training will also be unsatisfactory.

CONCLUSIONS AND SUGGESTIONS

Based on the results of the research and discussion, it can be concluded that there is an effect of drill method training and the target method on improving volleyball service skills in female junior athletes at the Gajah Mungkur Club, Samarinda. (1) There is an effect of service training on the drill method on improving service skills for volleyball athletes at Gajah Mungkur Club Samarinda, (2) There is an effect of service training on the method of using targets on improving service skills for volleyball athletes at Gajah Mungkur Club Samarinda, and (3) There are differences in the effect of service training on the drill method and the method of using targets on improving service skills for volleyball for the athletes of Gajah Mungkur Club Samarinda.

From the research conclusions above, several suggestions can be conveyed, namely: (1) For junior female athletes, the Gajah Mungkur volleyball club who has low top service, should be able to improve it with regular training with service training on the drill method and methods using targets as well as other forms of training, (2) To improve the results of service for volleyball for the Gajah Mungkur Club athletes, it is necessary to

provide better training compared to the drill method and the method using the target which turns out to only give a small contribution to an increase in training activities, (3) The coaches are expected to be able to apply effective training methods by designing a good form of training to achieve achievements, one of which is by practicing the drill method and using the targeted method, and (4) This research can be used as a reference and evaluation for trainers in making more varied modifications but maximizing in improving skills.

REFERENCES

- Anggraini, D., & Afrizal. (2019). Kontribusi Daya Ledak Otot Lengan dan Koordinasi Mata Tangan Terhadap Keterampilan Servis Atas Atlet Bolavoli. *Jurnal Patriot*, 1(1), 33–38. <https://doi.org/https://doi.org/10.24036/patriot.v1i1.151>.
- Arianto, Z. A. (2016). Hubungan Antara Kekuatan Otot Lengan dan Koordinasi Mata Tangan Dengan Ketepatan Servis Atas Siswa Yang Mengikuti Ekstrakurikuler Bolavoli di SMPN 2 Kediri Tahun 2017/2018. *Artikel Skripsi, Universitas Nusantara PGRI Kediri*, 02(03), 1–12. simki.unpkediri.ac.id/mahasiswa/file_artikel/2018/eea7a7361895c3d9f887d98c3fd6b3b3.pdf.
- Astuti, Y. (2017). Pengaruh Metode Drill dan Metode Bermain Terhadap Keterampilan Bermain Bola Voli Mini (Studi Eksperimen Pada Siswa SD Negeri 14 Kampung Jambak Kecamatan Koto Tangah Kota Padang). *Al Ibtida: Jurnal Pendidikan Guru MI*, 4(1), 01. <https://doi.org/10.24235/al.ibtida.snj.v4i1.1276>.
- Beutelstahl, D. 2015. *Belajar Bermain Bola Volley*. Bandung : CV. Pionir Jaya. Chusnul, F. dan Taufiq, H. 2016. “Pengaruh Latihan Drill Berpola Terhadap
- Fajri, A.D.M. 2016. “Pengaruh Latihan Bermain Target Terhadap Kemampuan Smash Bola Voli Mini Peserta Ekstrakurikuler di SMP Negeri 1 Minggir Sleman”. **Skripsi** Universitas Negeri Yogyakarta.
- Falid, C., & Hidayat, T. (2016). Pengaruh Latihan Drill Berpola Terhadap Peningkatan Keterampilan Underhand Pass Bolavoli (Studi Pada Ekstrakurikuler Siswa Putra Bolavoli SMP N 3 Sidayu). *Jurnal Pendidikan Olahraga Dan Kesehatan*, 4(1), 113–117. <https://semnas.univpgri-palembang.ac.id/index.php/semolga/article/download/101/105>.
- Hendra. O. 2017. “Pengaruh Latihan Shooting Dengan Latihan Imagery Menggunakan Audio Visual (Video) Terhadap Akurasi Shooting/Plesing Atlet Sepakbola Football Club Uny Academy Usia 15-16 Tahun”. **Skripsi** Universitas Negeri Yogyakarta.
- Ilkamto, M., & Saputra, Y. D. (2020). Peningkatan Hasil Belajar Servis Bawah Bolavoli

- Dengan Menggunakan Metode Problem Solving Pada Peserta Didik Kelas X SMKN 1 Jatirejo Kabupaten Mojokerto Tahun Pelajaran 2017/2018. *Jurnal Sport-Mu Pendidikan Olahraga UM Jember*, 1(1), 33–42. <http://jurnal.unmuhjember.ac.id/index.php/sportmu/article/view/3058>.
- Iskandar. (2014). Hubungan Koordinasi Mata-tangan dengan Servis Atas Bola Voli Mahasiswa Putra Penjaskes IKIP-PGRI Pontianak. *Jurnal Pendidikan Olah Raga*, 3, NO 2(88), 146–155. <https://doi.org/http://dx.doi.org/10.31571/jpo.v3i2.126>.
- Jaya, H., Insanisty, B., Sofino, S., & Defliyanto, D. (2019). Pengaruh Model Latihan Modifikasi Bola Gantung Terhadap Kemampuan Servis Atas Putra Ekstrakurikuler Smkn 3 Kota Bengkulu. *Kinestetik*, 2(2), 153–159. <https://doi.org/10.33369/jk.v2i2.6494>.
- Latta, I. M. (2015). Meningkatkan Keterampilan bolavoli Mahasiswa Penjas Dengan Metode Latihan. *Journal of Physical Education, Health and Sport*, 2(1), 1–10. <http://journal.unnes.ac.id/nju/index.php/jpehs>.
- Moh. Ali Mu'arifuddin. 2018. "Pengembangan Model Latihan Passing Bawah Klub Bola Voli IKIP Budi Utomo Malang". *Jurnal Penelitian Pembelajaran Malang*. Vol. 4 No. 2, hal. 191-204.
- Noerjannah, I., & Sudijandoko, A. (2016). Kontribusi Konsentrasi terhadap Keterampilan Ketepatan Servis Atas Bolavoli pada Pemain Putri SMK Negeri 1 Kemlagi Mojokerto. *Jurnal Kesehatan Olahraga*, 5(2), 47–50.
- Norma D.K. 2013. "Pengaruh Latihan Beban Terhadap Hasil Servis Atas Pada Peserta Ekstrakurikuler Bola Voli Putra SMP NEGERI 1 MANDIRAJA KABUPATEN BANJARNEGARA" **Skripsi** Universitas Negeri Yogyakarta.
- Nurhuda, D., Atiq, A., & Haetami, M. (2014). Hasil Belajar Servis Atas Pada Permainan Bola Voli Melalui Modifikasi Bola Karet. *Journal of Petrology*, 3(9), 1–9. <http://jurnal.untan.ac.id/index.php/jpdpb/article/view/7118>.
- Prabawa, D., Kharisma, Y., & Effendy, F. (2019). Pengaruh Model Pembelajaran Langsung Terhadap Hasil Teknik Dasar Servis Atas Bola Voli. *Jurnal Kependidikan Jasmani Dan Olahraga*, 3(1), 1–7. https://ejournal.stkipnu.ac.id/public_html/ejournal/index.php/jkjo/article/view/50.
- Pratiwi, E., & Prayogs, H. D. (2019). Analisis Kecepatan Reaksi Pada Atlet Bolavoli UNISKA. *Riyadhoh. Jurnal Pendidikan Olahraga*, 2(1), 1–8. <https://doi.org/http://dx.doi.org/10.31602/rjpo.v2i1.2024>.
- Ramadhan, R. S., & Hidayat, T. (2020). Pengaruh Reinforcement Negatif dan Positif Terhadap Motivasi Siswa Dalam Pembelajaran Servis Atas Bolavoli. *Jurnal Pendidikan Olahraga Dan Kesehatan*, 8(1), 301–305. <https://jurnalmahasiswa.unesa.ac.id/index.php/jurnal-pendidikan-jasmani/article/view/35309>.

- Ratimiasih, Y. (2021). Pengaruh Latihan Drill dan Berpasangan Terhadap Ketepatan Passing Bawah Pada Bolavoli Putri. *E_SPORT: Jurnal Kesehatan Jasmani, Kesehatan Rekreasi*, 1(2), 45–49. <https://journal.ipm2kpe.or.id/index.php/e-SPORT/article/view/2396>.
- Rohendi, Aep. dan Suwandar, E.H. 2018. *Metode Latihan dan Pembelajaran Bola Voli untuk Umum*. Bandung : Alfabeta.
- Ruslan, R. (2021). Pengaruh Metode Latihan Drill Terhadap Keterampilan Servis Bawah Permainan Bola Voli. *Jambura Journal of Sports Coaching*, 3(2), 68–73. <https://doi.org/10.37311/jjsc.v3i2.11337>.
- Ruslan, Hamdiana, Simon, Hendry Ismawan. 2020, pengaruh latihan pliometric terhadap kemampuan shooting sepak bola, *Kinestetik: Jurnal Ilmiah Pendidikan Jasmani* 4 (1), 33-40.
- Sahabuddin. (2018). Pengaruh Latihan Model Pembelajaran Pukulan Bola Ke Tembok Terhadap Kemampuan Servis Atas Bolavoli Pada Siswa SMK Negeri 2 Makassar. *Competitor: Jurnal Pendidikan Kepeleatihan Olahraga, FIK UNM*, 10(1), 28–36. <https://doi.org/https://doi.org/10.26858/com.v10i1.8480>.
- Sahabuddin. (2020). Ektifitas Kelentukan Pergelangan Tangan Dan Kekuatan Otot Lengan Dengan Kemampuan Servis Atas Bolavoli. *SPORTIVE: Journal Of Physical Education, Sport and Recreation*, 4(1), 23. <https://doi.org/10.26858/sportive.v4i1.17168>.
- Samsudin. (2017). Metode Mengajar Servis Bolavoli. *Prosiding Seminar Dan Lokakarya FIK UNJ*, 2(1), 106–110. <http://journal.unj.ac.id/unj/index.php/prosidingfik/article/view/9019>
- Saptiani, D., Sugiyanto, S., & Syafrial, S. (2019). Hubungan Kekuatan Otot Lengan Dan Koordinasi Mata Tangan Terhadap Akurasi Servis Atas Bola Voli Pada Peserta Putri Ekstrakurikuler Di Sman 2 Seluma. *Kinestetik*, 3(1), 42–50. <https://doi.org/10.33369/jk.v3i1.8810>
- Suaidah, N., Bakti, R. A., & Muharram, N. A. (2020). Penerapan Modifikasi Bola Untuk Meningkatkan Hasil Belajar Gerak Dasar Servis Bawah Permainan Bolavoli Mini Pada Siswa Kelas IV SD Negeri 4 Made Lamongan Tahun Ajaran 2019 / 2020. *SPRINTER: Jurnal Ilmu Olahraga*, 1(1), 57–61. <http://jurnal.icjambi.id/index.php/sprinter/article/view/38>
- Sudiby, Hernawan, & Susilo. (2020). Pengaruh Metode Latihan dan Koordinasi Terhadap Keterampilan Servis Atas Bolavoli. *Jurnal Segar*, 9(1), 31–42. <https://doi.org/https://doi.org/10.21009/segar/0901.04>
- Sugiyono. 2018. *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung : Alfabeta.
- Widhiasto, R. W. W., Alsaudi, A. T. B. D., & Suyatno, S. (2020). Meningkatkan Hasil Belajar Servis Bawah Bola Voli Mini melalui Pembelajaran Secara Bertahap. *Jurnal*

Ilmu Pendidikan (JIP) STKIP Kusuma Negara, 11(2), 181–188.
<https://doi.org/10.37640/jip.v11i2.158>

Widiastuti. 2015. *Tes dan Pengukuran Olahraga*. Jakarta: Rajawali Pers.

Yudhi, K. 2012. “Pengaruh Latihan Servis Atas Menggunakan Target Terhadap Hasil Servis Atas Dalam Cabang Olahraga Bola Voli.” **Skripsi** Universitas Pendidikan Indonesia.

Yuni, A. 2018 “Pengaruh Metode Drill Terhadap Keterampilan Bermain Bola Voli Mini Pada Siswa Sekolah Dasar”. *Jurnal Curricula*. Vol. 3 No. 1, hal. 53-71.