



JUARA: Jurnal Olahraga

E-ISSN 2655-1896 ISSN 2443-1117
<https://doi.org/10.33222/juara.v8i1.2721>



The Influence of Hand-Eye Coordination and Student Learning Discipline on the Basic Volleyball Technique Skills of Students Of SMP

Yona Evasari^{1*}, Kamal Firdaus², Syafruddin³, Hastria Efendi⁴
^{1,2,3} Universitas Negeri Padang, Jalan Prof. Dr. Hamkah, Air Tawar., Kecamatan Padang Utara,
Sumatra Barat, 25171, Indonesia.
*e-mail: evasariy882@gmail.com

Info Artikel

Article History:

Received 28 October 2022

Approved 25 January 2023

Published 01 February 2023

Keywords:

Hand-eye
Coordination, Study
discipline, Volleyball
skills

Abstract

This study aimed to see the effect of aerobic endurance, hand-eye coordination, and learning discipline on essential volleyball skill items for SMP N 2 North Lintau Buo. This type of research is path analysis (fat analysis) with the variables of aerobic endurance, eye-hand coordination, and learning discipline. The population of this study was 20 grade VIII students of SMP N 2 Lintau Buo Utara. The sampling technique in this study was purposive, so 20 students were randomly selected as the sample at SMP N 2 Lintau Buo Utara. The grouping of samples is random. Data was collected by testing basic volleyball skills: passing over, under, serve and serve over. The data was then analyzed by t-test. The study results can be concluded that there is a significant influence between hand-eye coordination and learning discipline in students playing volleyball. This is seen from the data analysis sig value <0.05 . So, hand-eye coordination and learning discipline are essential in volleyball.

© 2023 Yona Evasari, Kamal Firdaus, Syafruddin, Hastria Efendi
Under the license CC BY-SA 4.0

✉ Alamat korespondensi: Jalan Prof. Dr. Hamkah, Air Tawar., Kecamatan Padang Utara

E-mail: evasariy882@gmail.com

INTRODUCTION

The spread of Covid-19 has significantly impacted the world of education (Herlina & Suherman, 2020; Ekin, 2022; Ressa, 2021). Education during the Covid-19 era impacted people's behavior patterns (Atak et al., 2022). Community life is limited to interaction outside the home (Niemczyk, 2021; Putri et al., 2019). This includes sports

activities that must be temporarily stopped (Pratomo & Gumantan, 2021), making people feel objectionable. Therefore, the government issued social restrictions to overcome the spread of the Covid-19 virus (Yulianingsih & Parlindungan, 2020). (Arief et al., 2020) it was stated that the Covid-19 virus was the largest epidemic in Indonesia, killing 1,437 people.

Furthermore, the spread of the Covid-19 virus has limited humans from doing sports. Sport is essential for humans to maintain a healthy body (Anggara, 2021). Health is a particular human need (Sunardi & Kriswanto, 2020; Firdaus, 2015), so a healthy human body can carry out any activity. Furthermore, you can adopt a healthy lifestyle to maintain a healthy body. A healthy lifestyle is studied in sports and health physical education subjects (Komarudin & Prabowo, 2020; Mendrofa, 2021). Physical sports and health education is a subject that develops physical fitness, movement skills, and a healthy living environment (Tumaloto, 2022; Kilic et al., 2021; Firdaus, 2016).

Sports and physical health education are much liked by students (Syafruddin & Hashanah, 2020). This is because, in the Physical and Health Sports Education (PJOK) subject, students learn techniques and how to play big and small balls. (Ariantesa et al., 2022; Gumara & Wahyuri, 2022). One of the big ball games is volleyball. In volleyball games, students have not been able to do the basic movements of volleyball games correctly (Candra Dewi et al., 2020), especially doing underhand passing with frequent mistakes, namely students doing underhand passing with bent arms because the elbows are bent and errors in the starting position, namely an upright body position with the feet together or astride too wide so that the initial position of the feet is not stance (front behind). Mastery of the basic movement abilities of underhand volleyball

passing that still needs to be improved will affect the results of the match (Smadi, 2022). Because passing is the start of an attack, it is hoped that with good passing, it will be easier for a passer to vary attacks to other players or smashes.

The basic technique of playing volleyball is one of many elements that must be mastered in playing volleyball. However, other essential elements remain, namely the players' physical abilities. (Soytürk, 2019). Physical abilities of strength, endurance, explosive power, speed, flexibility, coordination, agility, and balance significantly contribute to playing volleyball. Each individual has different characteristics and levels of technical ability in volleyball games. Some have the talent to play volleyball well, but some have less ability. Students must be trained intensively and efficiently to improve their skills and achievements in playing volleyball (Kastrena et al., 2020; Supriyadi & Dupri, 2020). Therefore, a good training program is needed with the proper procedures by considering the elements that affect skill in playing volleyball.

Based on observations made at SMPN 2 Lintau Buo Utara, especially in Class VIII, it was found that the level of students' basic skills in volleyball was still standard and low. The author's observation found that the basic volleyball techniques had yet to be mastered to the fullest. Sports teacher Mr. Arif Kurnia said that due to limited teaching hours and sports practice, not only is volleyball being taught, but the mastery of basic techniques

and supporting factors also could be better. Not all of the 175 students in class VIII have mastered the basic techniques of playing volleyball. In playing volleyball, students must master the correct motion techniques and muscle endurance to produce significant muscle movements playing.

Research by (Surya et al., 2022) states that there is a relationship between hand-eye coordination in the ability to serve in volleyball games. Research (Oktariana & Hardiyono, 2020) stated that hand muscle power influences students' smash abilities in playing volleyball. (Broto, 2015) states that muscle strength plays a significant role in doing the smash in volleyball games. Study (Isabella & Bakti, 2021) in playing volleyball, the muscle power of the arms and legs is related to doing the smash. Based on this, this study aims to determine the effect of aerobic endurance, hand-eye coordination, and learning discipline on essential volleyball skill items for students of SMP N 2 North Lintau Buo.

METHODS

This research is a type of path analysis (fat analysis) with the variables of aerobic endurance, eye-hand coordination, and learning discipline. The population of this study was 20 grade VIII students of SMP N 2 Lintau Buo Utara. The sampling technique in this study was purposive, so 20 students were randomly selected as the sample at SMP N 2 Lintau Buo Utara. The grouping of samples is random. Data was collected by testing basic volleyball skills: passing over, under, serve and serve over. The data were then analyzed by t-test with SPSS version 16.

FINDINGS AND DISCUSSION

Finding

The measurement results of the 20 samples obtained the highest score of 8 and the lowest score of 4. The score distribution produces an average (mean) of 5.80 and a standard deviation of 1.32. The complete distribution of data is in Table 2.

Table 2. Hand-Eye Coordination Distribution Data

Interval	Frekuensi Absolut	Frekuensi Relatif (%)	Kategori
> 7	2	10	Baik sekali
7 - 6	9	45	Baik
6 - 5	5	25	Cukup
4 - 3	4	20	Kurang
< 3	0	0	Sangat Kurang
Jumlah	20	100	

Based on Table 2. Shows data on the distribution of eye-hand coordination of 20 samples, included in the interval less than < 3,

no person (0%) belongs to the inferior category, four people (20%) fall into the interval 3 - 4, classified in the less category,

five people (25%) are included in the 5-6 interval belonging to the excellent category, then nine people (45%) are included in the 6-7 interval in the excellent category. Two people (10%) are in the outstanding category. Not only that, but this study also looked at the

level of discipline of students in carrying out basic exercises in volleyball games for students of SMP N 2 North Lintau Buo. Complete student discipline frequency data can be seen in the table.3

Table 3. Student Discipline Frequency Distribution Data

Clasification	Criteria	F	%
86% -100%	Sangat Baik	1	5,00
76% - 85%	Baik	1	5,00
60% - 75%	Cukup	8	40,00
55% - 59%	Kurang	7	35,00
<54%	Kurang Sekali	3	15,00
	jumlah	20	100,00

Based on Table 3, the distribution of the frequency of student discipline in carrying out basic volleyball exercises from the 20 students selected as the research sample is in the 86% - 100% classification (1 person 5.00%) in the outstanding category, is in the classification 76% - 85% (1 person 5.00%) in the excellent category. In the classification of 60% - 75% (8 people 40.00%) in the excellent category. In the classification of 55% - 59% (7 people 35.00%) in the less category. at a value of <54% (3 people 15.00%) with significantly less category. So, the training discipline of junior students is in the Enough category. Therefore, aerobic endurance, hand-eye coordination, and learning discipline affect the basic volleyball skills of SMP N 2 North Lintau Buo. This can be seen from the path analysis test in Figure 1.

Based on the Rsquare calculation table, Rsquare = 0.616, while in the Anova table, F = 6.019 with probability (sig.) = 0.004, because

the sig value $< \alpha = 0.05$, then H0 is rejected and Ha is accepted. From the explanation above, it can be said that aerobic endurance, eye-hand coordination, and learning discipline simultaneously influence the essential technical skills of volleyball. The equation for each variable of aerobic endurance, hand-eye coordination, and learning discipline Basic volleyball technique skills (X1, X2, X3, to Y) uses the formula:

Based on the explanation above, it can be seen that the influence of aerobic endurance, hand-eye coordination, and learning discipline on basic volleyball technical skills is 61.6%, for the remaining 38.4% were again influenced by other factors.

Discussion

From the research results obtained from the variables of student hand-eye coordination and basic volleyball technical skills, it was found that hand-eye coordination (X2) had a direct effect on basic volleyball technical skills

(Y). These results can be seen in the coefficient table, which shows an effect of $\text{pyx2} = 0.404$. Students' eye-hand coordination also influences the basic volleyball technical skills they achieve.

Coordination is a determining indicator of whether or not a student's technique is good. This agrees with Hanum et al. (2014), who said that eye-hand coordination is a state of the body based on specific variables such as the eyes and hands and objects that can show the body's ability to display skills to form techniques. In addition, according to Fikawati et al. (2017), eye-hand coordination is defined as a state of balance in the form of certain variables as a determinant of whether or not daily food provision is good. Furthermore, Supariasa et al. (2010) interpret eye-hand coordination as the body's balance in manifesting nutrition in a variable form (Safarrudin et al., 2022).

A student with good (regular) eye-hand coordination will undoubtedly have good physical health to support students in daily physical activities. Hand-eye coordination in this study was measured based on the height and weight of the students. Students with ideal height and weight will have agile movements and be more active than others. Students with fat hand-eye coordination tend to get tired quickly; due to the fat body condition, students become heavy to move agilely. Then reinforced by research conducted by Nurcahyo (2015), namely the link between obesity and physical activity, the results show that physical activity provides benefits to prevent obesity. Therefore, it can be concluded that eye-hand

coordination has a positive and good relationship with basic volleyball technical skills (Supriyanto, 2013), which means that better one's hand-eye coordination will have a good effect on basic technical skills in playing tennis (Manggala et al., 2022).

Students who have good eye-hand coordination are students who have good views and catches. This is the rationale and foundation of the author in formulating and submitting hypotheses in research to obtain empirical evidence (Oktariana & Hardiyono, 2020). From the explanation above, students with a proportional body and height will affect the output of basic volleyball technical skills.

The research results that have been obtained from the student learning discipline variables show a direct influence of learning discipline (X3) on the technical skills of basic volleyball techniques (Y). These results can be seen in the coefficient table, which shows an effect of $\text{pyx3} = 0.501$. Students learning discipline also influences the technical skills of the basic volleyball techniques they achieve.

Learning Discipline is the principal capital for all human life. Athletes need a good level of Learning Discipline to be able to help achieve high sports achievements; workers and even students at school also need to improve their Learning Discipline so that in the learning process, students at school are more active in carrying out learning at school (Syukri et al., 2020). Thus a good Discipline of Study is expected to be able to function the body effectively and efficiently

In Yani's opinion (2017), Learning

Discipline is crucial because, through it, students can organize themselves to achieve the achievement goals they expect. Seeing this description, students need to have good self-discipline because it will affect the course of the training and competition process (Herlina & Suherman, 2020). A student with self-discipline can respect himself and all the elements that can improve his achievement.

Based on the research results that researchers in the field have carried out, there is conformity with the experts' theoretical opinions and explanations that Learning Discipline can directly influence the technical skills of basic volleyball techniques students achieve. This is explained in the theoretical study that the author describes that Learning Discipline is very much needed in every student because this Learning Discipline is the key to the success of these students in forming a good and orderly life order so that students have distinguished personalities.

This is the rationale and foundation of the author in formulating and submitting hypotheses in research to obtain empirical evidence. From the explanation above, it can be said that students need to have good Learning Discipline because students must be able to complete daily tasks (exercise) quickly, without significant fatigue and can still enjoy their free time and, in an emergency, still be able to do work that is not expected (Marianto, 2023).

CONCLUSION

From the research study can be concluded that there is a significant influence between hand-

eye coordination and learning discipline in students playing volleyball. This is seen from the results of data analysis sig value < 0.05 . So, hand-eye coordination and learning discipline have an important role in the game of volleyball.

REFERENCES

- Anggara, F. (2021). Evaluasi Tingkat Pembelajaran Pendidikan Pandemi Covid-19. *Jurnal Ilmiah Bina Edukasi*, 1(1), 37–45.
- Ariantesa, B., Wahyuri, A. S., & Hb, B. (2022). *International Journal of Education and Literature (IJEL)* E- ISSN : 2829-6249 P -ISSN : 2829-6656 E-Module Development of Physical Education Subjects for Sports and Health on Physical Fitness Materials for Class VII Junior High School Students Internatio.
- Arief, N. A., Kuntjoro, B. F. T., & Suroto, S. (2020). Gambaran Aktifitas Fisik Dan Perilaku Pasif Mahasiswa Pendidikan Olahraga Selama Pandemi Covid-19. *Multilateral Jurnal Pendidikan Jasmani Dan Olahraga*, 19(2), 175. <https://doi.org/10.20527/multilateral.v19i2.9564>
- Atak, V., Yaşar, H., & Purzer, S. (2022). Seeing the Invisible: A Retrospective Examination of Education during COVID-19. *International Journal on Social and Education Sciences*, 4(2), 178–189. <https://doi.org/10.46328/ijonses.345>
- Broto, D. P. (2015). Pengaruh Latihan Plyometrics Terhadap Power Otot Tungkai Atlet Remaja Bola Voli. *Motion*, 6(2), 174–185. <https://jurnal.unismabekasi.ac.id/index.php/motion/article/download/506/403>
- Candra Dewi, N. K. A. T., Astra, I. K. B., & Suwiwa, I. G. (2020). Motivasi Mahasiswa Prodi Pendidikan Jasmani Kesehatan Dan Rekreasi Fakultas Olahraga Dan Kesehatan Menjaga Kebugaran Jasmani Pada Masa Pandemi Covid-19. *Jurnal Ilmu Keolahragaan*

- Undiksha, 8(1).
<https://doi.org/10.23887/jiku.v8i1.29573>
- Ekin, C. Ç. (2022). A Mapping Global Research Trends on COVID-19 in Education: A Bibliometric Analysis. *International Journal of Technology in Education and Science*, 6(3), 508–523.
<https://doi.org/10.46328/ijtes.405>
- Firdaus, K. (2015). THE IMPLEMENTATION OF PHYSICAL AND HEALTH EDUCATION IN SCHOOL Council for Innovative Research. *Peer Review Research Publishing System Journal: International Journal of Research in Education Methodology*, 7(3), 1203–1207. www.ijrem.com
- Firdaus, K. (2016). The Learning Process of Physical and Health Education Subject in Class Viii of Smp N 4 Kota Payakumbuh. *Journal of Social Science Research*, 10(4), 2173–2177.
<https://doi.org/10.24297/jssr.v10i4.4713>
- Gumara, O. H., & Wahyuri, A. S. (2022). Pengembangan E-Modul Mata Pembelajaran Pendidikan Jasmani Olahraga dan Kesehatan pada Materi Pokok Pola Hidup Sehat untuk Siswa Sekolah Menengah Pertama. *Edukatif: Jurnal Ilmu Pendidikan*, 4(4), 6185–6192.
<https://doi.org/10.31004/edukatif.v4i4.3066>
- Herlina, H., & Suherman, M. (2020). Potensi Pembelajaran Pendidikan Jasmani Olahraga Dan Kesehatan (Pjok) Di Tengah Pandemi Corona Virus Disease (Covid)-19 Di Sekolah Dasar. *Tadulako Journal Sport Sciences And Physical Education*, 8(1), 1–7.
<http://jurnal.untad.ac.id/jurnal/index.php/PJKR/article/view/16186>
- Isabella, A. P., & Bakti, A. P. (2021). Hubungan Daya Ledak Otot Tungkai Dan Kekuatan Otot Lengan Terhadap Accuracy Smash Bolavoli. *Jurnal Kesehatan Olahraga*, 151–160.
<https://ejournal.unesa.ac.id/index.php/jur>
- nal-kesehatan-olahraga/article/view/40957
- Kastrena, E., Setiawan, E., Patah, I. A., & Nur, L. (2020). Pembelajaran Peer Teaching Berbasis Zoom Video sebagai Solusi untuk Meningkatkan Hasil Belajar Passing Bawah Bola Voli saat Situasi Covid 19. *Indonesian Journal of Primary Education*, 4(1), 69–75.
<https://doi.org/10.17509/ijpe.v4i1.25133>
- Kelentukan, H., & Dan, P. (2022). Tangan Dengan Kemampuan Servis Atas Pada Peserta. 3(2), 122–134.
- Kılıç, T., & Hınçal, S. (2021). The Effects of Pilates Mat Exercises on self-rated health Levels, Body Mass Index and Flexibility in Middle Age Sedentary Women. *Education Quarterly Reviews*, 4(2), 166–179.
<https://doi.org/10.31014/aior.1993.04.02.208>
- Komarudin, K., & Prabowo, M. (2020). Persepsi siswa terhadap pembelajaran daring mata pelajaran pendidikan jasmani olahraga dan kesehatan pada masa pandemi Covid-19. *MAJORA: Majalah Ilmiah Olahraga*, 26(2), 56–66.
<https://doi.org/10.21831/majora.v26i2.34589>
- Mendoza, F. (2021). Pendidikan Jasmani, Olahraga dan Kesehatan (PJOK) Masa Pandemi Covid-19 di Indonesia. *Edukatif: Jurnal Ilmu Pendidikan*, 3(4), 2125–2131.
<https://doi.org/10.31004/edukatif.v3i4.1124>
- Niemczyk, E. K. (2021). The Impact of COVID-19 on Higher Education Institutions: Focus on Research and Teaching Practice. *New Challenges to Education: Lessons from Around the World*, 19, 253–259.
- Oktariana, D., & Hardiyono, B. (2020). Pengaruh Daya Ledak Otot Lengan , Daya Ledak Otot Tungkai Dan Kekuatan Otot Perut Terhadap Hasil Smash Bola Voli Pada Siswa SMK Negeri 3

- Palembang The Influence of Arm Muscles Explosive Power , Limb Muscles Explosive Power and Abdominal Muscle Strength on. *Journal Coaching Education Sports*, 1(1), 13–26. <https://doi.org/10.31599/jces.v1i1.82>
- Pratomo, C., & Gumantan, A. (2021). Analisis Efektifitas Pembelajaran Daring Terhadap Hasil Belajar Pendidikan Olahraga Pada Masa Pandemi Covid-19 SMK SMTI Bandarlampung. *Journal Of Physical Education*, 2(1), 26–31. <https://doi.org/10.33365/joupe.v2i1.964>
- Putri, K. Y. S., Fathurahman, H., Safitri, D., & Sugiyanta, L. (2019). Journal of Social Studies Education Research Sosyol Bilgiler Eđitimi Arařtırmaları Dergisi. *Journal of Social Studies Education Research*, 10(3), 364–386. <https://jsser.org/index.php/jsser/article/view/3043>
- Ressa, T. W. (2021). The COVID-19 Pandemic, its Consequences, and the Recovery: Implementation of Disaster Education and Management is Key to the Schooling of Children with Disabilities. *International Journal of Modern Education Studies*, 5(1), 22. <https://doi.org/10.51383/ijonmes.2021.62>
- Smadi, O. Y. (2022). The Satisfaction Level of Students with Disabilities with Library and Information Services. *International Journal of Education in Mathematics, Science and Technology*, 10(2), 436–457. <https://doi.org/10.46328/IJEMST.2246>
- Soytürk, M. (2019). Analysis of Self and Peer Evaluation in Basic Volleyball Skills of Physical Education Teacher Candidates. *Journal of Education and Learning*, 8(2), 256. <https://doi.org/10.5539/jel.v8n2p256>
- Sunardi, J., & Kriswanto, E. S. (2020). Perilaku hidup bersih dan sehat mahasiswa pendidikan olahraga Universitas Negeri Yogyakarta saat pandemi Covid-19. *Jurnal Pendidikan Jasmani Indonesia*, 16(2), 156–167. <https://doi.org/10.21831/jpji.v16i2.35082>
- Supriyadi, A., & Dupri. (2020). Peningkatan hasil belajar bolavoli dengan menggunakan sistem daring. *Edu Sportivo: Indonesian Journal of Physical Education*, 1(2), 112–119. [https://doi.org/10.25299/es:ijope.2020.vo11\(2\).5609](https://doi.org/10.25299/es:ijope.2020.vo11(2).5609)
- Syafruddin, & Hasanah, U. (2020). Review on the Implementation of Physical Education Learning. 460(Icpe 2019), 276–279. <https://doi.org/10.2991/assehr.k.200805.075>
- Tumaloto, E. H. (2022). Pembelajaran Pendidikan Jasmani, Olahraga Dan Kesehatan Selama Pandemi Covid 19. *Jambura Health and Sport Journal*, 4(1), 60–68. <https://doi.org/10.37311/jhsj.v4i1.13602>
- Yulianingsih, I., & Parlindungan, D. P. (2020). Persepsi Mahasiswa Pendidikan Olahraga terhadap Perkuliahan Daring Selama Pandemi Covid-19. *Gelombang Olahraga: Jurnal Pendidikan Jasmani Dan Olahraga (JPJO)*, 4(1), 31–46. <https://doi.org/10.31539/jpjo.v4i1.1467>