



HJSE

Holistic Journal of Sport Education

E-ISSN: 2809-9974

<https://journal.uniga.ac.id/index.php/penjas>

DOI: 10.52434/penjas.v5i2.44240



ANALYSIS OF PASSING AND SHOOTING SKILLS IN FUTSAL AMONG PHYSICAL EDUCATION STUDENTS

*Riko Samuel Suruan^{1-ABCDE}, Saiful Anwar^{1-ACD}, Bandung Bumboro^{1-ABC}

¹Department of Physical Education, Universitas Pendidikan Muhammadiyah Sorong, Indonesia

Keywords:

Futsal; Passing Skill; Shooting Skill; Physical Education Students.

Abstract

Passing and shooting are fundamental technical skills that determine the effectiveness of offensive play in futsal. Evaluating these skills among university students is essential for identifying technical proficiency and providing evidence-based guidance for improving learning strategies in physical education programs. However, empirical data describing the level of futsal technical skills among physical education students remain limited, particularly in the context of Indonesian higher education. This study aimed to analyze the passing and shooting skills of fifth-semester Physical Education students at Universitas Pendidikan Muhammadiyah (UNIMUDA) Sorong. A quantitative descriptive research design was employed involving 10 students who participated in futsal activities. Data were collected through standardized passing and shooting skill tests and analyzed using descriptive statistics, including mean, median, mode, standard deviation, minimum, maximum, and percentage-based performance categories. The results showed that the shooting skill scores had a mean of 15.22, median of 14.00, mode of 14.00, standard deviation of 4.94, with scores ranging from 8 to 24. Passing skill scores yielded a mean of 15.40, median of 15.00, mode of 15.00, standard deviation of 3.24, with scores ranging from 11 to 20. Based on performance classification, 20% of students were in the moderate category, 40% in the good category, and 40% in the very good category, while no students were classified as poor. Overall, the passing ability of the participants was categorized as moderate to good. These findings provide baseline evidence regarding the technical competence of Physical Education students and contribute to the development of targeted, evidence-based futsal training and curriculum evaluation in higher education.

Received: April 4, 2026

Accepted: June 11, 2026

Published: June 30, 2026

Authors' contribution:

A - Conception and design of the study; B - Acquisition of data; C - Analysis and interpretation of data; D - Manuscript preparation; E - Obtaining funding

Correspondence:

Riko Samuel Suruan
Email: rikosuruan9@gmail.com



INTRODUCTION

Futsal has become one of the fastest-growing sports worldwide because it emphasizes high-intensity play, rapid decision-making, technical precision, and tactical intelligence within a limited playing area (Gómez et al., 2023; Nemčić & Calleja-González, 2021; Silva et al., 2022). Compared with conventional football, futsal requires players to execute technical actions under greater spatial and temporal constraints, making technical proficiency a decisive factor in match performance (Dwi Juniarsyah et al., 2021). Consequently, mastery of fundamental techniques is considered the foundation for successful individual and team performance.

Among the various technical skills in futsal, passing and shooting are recognized as the most influential determinants of attacking effectiveness (Pratama et al., 2020; Santos et al., 2020). Passing enables teams to maintain ball possession, create offensive opportunities, and organize tactical movements, whereas shooting directly determines the team's ability to convert scoring opportunities into goals (Barron et al., 2020; Novianda et al., 2014; Sukmawarti et al., 2019). Previous studies consistently report that successful team performance is strongly associated with players' passing accuracy and shooting effectiveness, particularly during high-pressure situations. Therefore, systematic evaluation of these two technical skills is essential for improving player performance and designing evidence-based training programs (Muslim et al., 2019).

Technical performance in futsal is not determined solely by tactical understanding but is also influenced by physical attributes, including muscular strength, power, coordination, agility, balance, and reaction speed (Aktas, 2023; Pambudi Rilo et al., 2021). These physical components support the execution of accurate passes and powerful shots during competitive situations. Consequently, identifying the current level of technical ability provides valuable information for coaches and lecturers in developing appropriate training interventions that integrate technical and physical preparation (Amaliya & Pudjijuniarto, 2022; Litardiansyah & Hariyanto, 2022; Stubbs-Gutierrez & Medina-Porqueres, 2021).

Although numerous studies have investigated futsal performance, the majority have focused on the effectiveness of training methods, physiological responses, physical conditioning, or intervention-based programs (Rubiyatno et al., 2023; Suryadi, 2022; Suryadi & Rubiyanto, 2022). Comparatively fewer studies have examined the baseline technical competence of university students using a descriptive analytical approach. Furthermore, evidence regarding the passing and shooting abilities of Physical Education students in Eastern Indonesia remains limited, despite these students being prospective physical education teachers and sports practitioners who are expected to demonstrate adequate technical competence (Rozi et al., 2023; Suryadi et al., 2023; Suryadi & Rubiyatno, 2022). This lack of empirical data represents an important research gap because curriculum evaluation and athlete development should be supported by objective assessments of students' technical performance.



The novelty of the present study lies in providing an integrated descriptive analysis of passing and shooting skills among Physical Education students at Universitas Pendidikan Muhammadiyah (UNIMUDA) Sorong using standardized skill assessments and performance classification. Unlike previous studies that primarily emphasized intervention outcomes, this research establishes baseline evidence of students' technical competence, identifies strengths and weaknesses in essential futsal skills, and offers practical information for curriculum evaluation and the development of targeted training programs within higher education.

Therefore, this study aims to analyze the levels of passing and shooting skills among fifth-semester Physical Education students at Universitas Pendidikan Muhammadiyah (UNIMUDA) Sorong. The findings are expected to contribute to the literature on futsal skill assessment while providing evidence-based recommendations for lecturers, coaches, and educational institutions in designing more effective technical training and learning strategies.

RESEARCH METHODS

Research Design

This study employed a quantitative descriptive research design to analyze the passing and shooting skills of Physical Education students in futsal. A descriptive approach was selected because the study aimed to objectively identify the current level of technical skills without implementing any intervention or experimental treatment. The research focused on describing students' performance based on standardized futsal skill assessments and classifying their technical abilities into predetermined performance categories. The findings were intended to provide baseline information that can be used for evaluating technical competence and developing future training programs.

Participants

The participants consisted of 10 fifth-semester students enrolled in the Physical Education Study Program at Universitas Pendidikan Muhammadiyah (UNIMUDA) Sorong who actively participated in futsal activities. Because the population was relatively small, all eligible students were included in the study using a total sampling technique. Participants voluntarily agreed to participate in the assessment and completed the passing and shooting skill tests under the same testing conditions. Prior to data collection, participants received standardized instructions regarding the testing procedures to ensure consistency and minimize measurement bias.

Data Analysis

Data were collected using standardized futsal skill tests measuring passing and shooting performance. The collected data were analyzed using descriptive statistical techniques with IBM SPSS Statistics (Version 26). Descriptive statistics included the mean, median, mode, standard deviation, minimum score, and maximum score to

summarize participants' technical performance. Furthermore, the results were converted into percentage distributions and classified into performance categories (poor, moderate, good, and very good) to facilitate interpretation of students' skill levels. The descriptive findings were then interpreted to identify the overall profile of passing and shooting abilities among the participants and to provide evidence-based recommendations for technical skill development in university futsal programs.

RESULTS AND DISCUSSION

Results

A total of 10 fifth-semester Physical Education students at Universitas Pendidikan Muhammadiyah (UNIMUDA) Sorong participated in this study. Descriptive statistical analysis was performed to summarize the participants' passing and shooting performance.

Table 1.
Descriptive Statistics of Passing and Shooting Skills

Variable	n	Mean	Median	Mode	SD	Minimum	Maximum
Shooting	10	15.10	14.00	14.00	4.64	8	24
Passing	10	15.40	15.00	15.00	3.24	11	20

The descriptive statistics indicate that the average shooting score was 15.10 (SD = 4.64), with scores ranging from 8 to 24. Passing performance showed a slightly higher mean score of 15.40 (SD = 3.24), with scores ranging from 11 to 20. Compared with shooting performance, passing scores demonstrated lower variability, indicating more consistent technical performance among the participants.

Table 2.
Distribution of Shooting Skill Levels

Category	Score Interval	Frequency	Percentage
Poor	0–6	0	0%
Moderate	7–12	2	20%
Good	13–17	5	50%
Very Good	≥18	3	30%
Total		10	100%

Most participants (50%) demonstrated a good level of shooting ability, while 30% achieved the very good category and 20% were classified as moderate. No participants were categorized as having poor shooting performance. Overall, the average shooting score indicates that the participants' shooting ability was at the good performance level. The distribution of passing performance is presented in Table 3.

Table 3.
Distribution of Passing Skill Levels

Category	Score Interval	Frequency	Percentage
Poor	0–6	0	0%
Moderate	7–12	2	20%
Good	13–17	4	40%
Very Good	≥18	4	40%
Total		10	100%

The passing assessment showed that 40% of participants were classified as good, while another 40% achieved the very good category. The remaining 20% were classified as moderate, and no participants were categorized as poor. These findings indicate that the participants generally demonstrated satisfactory passing performance, with an average score of 15.40, corresponding to a good level of technical proficiency.

Discussion

This study analyzed the passing and shooting skills of fifth-semester Physical Education students at Universitas Pendidikan Muhammadiyah (UNIMUDA) Sorong. The findings revealed that most participants demonstrated good levels of technical performance in both shooting and passing. Specifically, 50% of the participants were classified as having good shooting ability and 30% as very good, while passing performance was distributed equally between the good (40%) and very good (40%) categories. These findings indicate that the participants had generally achieved satisfactory mastery of two essential futsal techniques.

Passing and shooting represent the fundamental technical components that determine attacking effectiveness in futsal (Doewes et al., 2022). Passing accuracy enables players to maintain ball possession, create offensive opportunities, and execute tactical combinations, whereas shooting accuracy directly influences the team's ability to convert goal-scoring opportunities into successful finishes (Fahad & Mohammed, 2024; Wijaya Kusuma, 2021). Consequently, players with better technical proficiency are more capable of making effective decisions under the high-tempo conditions characteristic of futsal matches. These findings support previous studies reporting that technical performance is one of the strongest predictors of successful match outcomes in futsal because the game demands rapid ball circulation, precise passing, and efficient finishing under limited space and time constraints (Fahad & Mohammed, 2024).

The predominance of participants within the good and very good categories suggests that the learning process and practical training implemented in the Physical Education program have contributed positively to students' technical competence (Haugen et al., 2014; Naser et al., 2017). As prospective physical education teachers

and sports practitioners, students are expected not only to understand theoretical concepts but also to demonstrate adequate technical proficiency in sport-specific skills. This finding indicates that regular participation in futsal activities may facilitate motor learning through repeated practice, thereby improving movement coordination, technical accuracy, and confidence during game situations (Abdullah & Abdullah, 2025; Fahad & Mohammed, 2024). According to the principles of motor learning, repeated practice accompanied by appropriate feedback promotes the automation of movement patterns and enhances technical consistency during performance.

Despite these positive findings, 20% of the participants remained within the moderate category for both shooting and passing. This variation suggests that technical mastery among students is not yet homogeneous. Differences in prior playing experience, training frequency, physical fitness, coordination, and perceptual decision-making may explain these disparities (Hutomo et al., 2019; Mendes et al., 2022). Previous research has demonstrated that technical performance in futsal is influenced not only by technical practice but also by neuromuscular qualities, agility, lower-limb power, balance, and perceptual-cognitive abilities, which collectively determine the effectiveness of passing and shooting execution during match play (García-Angulo & García-Angulo, 2018; Gomes et al., 2011; Haugen et al., 2014; Naser et al., 2017).

Another important finding is that none of the participants were classified in the poor category for either passing or shooting. This result indicates that all participants had attained a minimum level of technical competence expected from university students enrolled in a Physical Education program. Although encouraging, the absence of poor performance should not be interpreted as evidence that technical development has reached an optimal level. Continuous evaluation remains necessary because higher levels of competition require greater passing accuracy, faster decision-making, and more effective shooting under defensive pressure. Therefore, periodic technical assessment can provide objective information for monitoring student development and designing individualized training programs (Barreira et al., 2024; Barron et al., 2020; Machado et al., 2022; Novianda et al., 2014).

The present study contributes to the existing literature by providing baseline evidence regarding the technical competence of Physical Education students in Eastern Indonesia, a population that has received relatively limited attention in previous futsal research. While earlier studies have predominantly focused on intervention-based training programs or physiological adaptations, this study emphasizes the descriptive profiling of passing and shooting abilities as an important component of curriculum evaluation and athlete development. These findings may assist lecturers and coaches in designing evidence-based technical training programs that focus on improving shooting accuracy, passing consistency, and game-related decision-making within higher education settings.

CONCLUSION

This study analyzed the passing and shooting skills of fifth-semester Physical Education students at Universitas Pendidikan Muhammadiyah (UNIMUDA) Sorong. The findings indicate that the participants generally demonstrated satisfactory technical competence, with most students classified in the good and very good categories for both passing and shooting, while no participants were categorized as having poor performance. These results suggest that the students have acquired the fundamental technical skills required to support effective futsal performance, although variations in individual ability indicate that further technical development is still necessary. The study contributes to the existing literature by providing baseline empirical evidence on the technical proficiency of Physical Education students, which can be used as a reference for evaluating practical learning outcomes and developing evidence-based futsal training programs in higher education. From a practical perspective, the findings may assist lecturers and coaches in identifying students' strengths and weaknesses and in designing more targeted technical training focused on improving passing accuracy, shooting precision, and game performance.

This study is limited by its relatively small sample size and the inclusion of participants from a single university, which may restrict the generalizability of the findings. Future studies should involve larger and more diverse samples from multiple institutions, incorporate physical and tactical performance variables, and examine the relationships between technical skills, physical fitness, and match performance to obtain a more comprehensive understanding of futsal player development.

Conflict of interest

The authors declare no conflict of interest.

Funding

No external funding information was provided for this revision.

REFERENCES

- Abdullah, M. M., & Abdullah, S. H. (2025). The relationship between positive illusion and performance skill level among female athletes of Aphrodite Sports club. *Tanjungpura Journal of Coaching Research*, 3(2), 87–101. <https://doi.org/10.26418/tajor.v3i2.90281>
- Aktas, S. (2023). Evaluation of agility and acceleration levels in male and female futsal players. *Turkish Journal of Kinesiology*. <https://doi.org/10.31459/turkjin.1257457>
- Amaliya, I., & Pudjijuniarto, P. (2022). Analysis of the Physical Condition of Women's Futsal Athletes at SMK Muhammadiyah 1 Gresik. *Indonesian Journal of Kinanthropology (IJOK)*. <https://doi.org/10.26740/ijok.v2n2.p66-75>
- Barreira, J., da Silva Junior, J. E. P., & de Souza, C. P. (2024). Research on women's futsal: a scoping review. *Science and Medicine in Football*.



- <https://doi.org/10.1080/24733938.2024.2310503>
- Barron, D. J., Collins, D., & Carling, C. (2020). Match performance in a reference futsal team during an international tournament - implications for talent development in soccer. Christopher Yiannaki. *Biology of Sport*. <https://doi.org/10.5114/BIOLOSPORT.2020.93040>
- Doewes, R. I., Elumalai, G., & Azmi, S. H. (2022). Futsal Shooting Moving Ball Test (FSMT) Assessment as a New Testing Protocol. *International Journal of Human Movement and Sports Sciences*. <https://doi.org/10.13189/saj.2022.100621>
- Dwi Juniarsyah, A., Safei, I., Bahri, S., Resmana, D., & Fahmi Hasan, M. (2021). Aerobic and anaerobic capacities in determining adolescent futsal players' performance levels. *Jurnal SPORTIF: Jurnal Penelitian Pembelajaran*, 7(3), 442–453. https://doi.org/10.29407/js_unpgri.v7i3.16810
- Fahad, A. N., & Mohammed, W. Y. (2024). Strategic Performance and Work Passion and their Relationship to Emotional Exhaustion Among Futsal Coaches. *International Journal of Disabilities Sports and Health Sciences*, 7(3), 630–636. <https://doi.org/10.33438/ijds.1441963>
- García-Angulo, A., & García-Angulo, F. J. (2018). Analysis of corner kicks in relation to performance in the uefa euro futsal 2016. *Journal of Sport and Health Research*.
- Gomes, S. A., Sotero, R. da C., Giavoni, A., & Melo, G. F. de. (2011). Avaliação da composição corporal e dos níveis de aptidão física de atletas de futsal classificados segundo a tipologia dos esquemas de gênero. *Revista Brasileira de Medicina Do Esporte*. <https://doi.org/10.1590/s1517-86922011000300001>
- Gómez, E. M., Atef, H., Elsayed, S. H., Zakaria, H. M., Navarro, M. P., & Sulé, E. M. (2023). Effects of high-intensity interval training with an eccentric hamstring exercise program in futsal players: A randomized controlled trial. *Medicine*, 102(31), e34626. <https://doi.org/10.1097/MD.00000000000034626>
- Haugen, T. A., Tønnessen, E., Hisdal, J., & Seiler, S. (2014). The Role and Development of Sprinting Speed in Soccer Sprinting Demands During Match Play. *International Journal of Sports Physiology and Performance*.
- Hutomo, A. S., Kristiyanto, A., & Purnama, S. K. (2019). The Use of Video Media in Improving Futsal Basic Techniques Skills of Male Students of Futsal Hobbyist. *International Journal of Multicultural and Multireligious Understanding*. <https://doi.org/10.18415/ijmmu.v6i4.969>
- Litardiansyah, B., & Hariyanto, E. (2022). Survei Kondisi Fisik Peserta Ekstrakurikuler Futsal Putra dan Putri Sekolah Menengah Atas. *Sport Science and Health*, 2(6), 331–339. <https://doi.org/10.17977/um062v2i62020p331-339>
- Machado, G., González-Víllora, S., & Teoldo, I. (2022). Contribution of deliberate practice, play, and futsal to the acquisition of decision-making skills in Brazilian professional female soccer players. *International Journal of Sport and Exercise Psychology*, 1–19. <https://doi.org/10.1080/1612197X.2022.2161101>
- Mendes, D., Travassos, B., Carmo, J. M., Cardoso, F., Costa, I., & Sarmento, H. (2022). Talent Identification and Development in Male Futsal: A Systematic Review. *International Journal of Environmental Research and Public Health*, 19(17), 10648. <https://doi.org/10.3390/ijerph191710648>
- Muslim, E., Tetelepta, Y. W., Asyrof, D. D., & Shabrina, G. (2019). Biomechanics analysis with optimal combination by using foot and distance when the futsal player passing the ball against the accuracy of the target. *AIP Conference Proceedings*. <https://doi.org/10.1063/1.5096703>



- Naser, N., Ali, A., & Macadam, P. (2017). Physical and physiological demands of futsal. In *Journal of Exercise Science and Fitness*. <https://doi.org/10.1016/j.jesf.2017.09.001>
- Nemčić, T., & Calleja-González, J. (2021). Evidence-based recovery strategies in futsal: A narrative review. In *Kinesiology*. <https://doi.org/10.26582/K.53.1.16>
- Novianda, G., Kanca, I. N., & Darmawan, G. E. B. (2014). Metode Pelatihan Taktis Passing erpasangan Statis Dan Passing Sambil Bergerak Terhadap Keterampilan Teknik Dasar Passing Control Bola Futsal. *E-Journal PKO*, 1(2), 1–13. <https://doi.org/http://dx.doi.org/10.23887/jjpko.v2i1.3551>
- Pambudi Rilo, S., Rahayu, T., & Rumini, R. (2021). The Influence of Training Methods and Agility Towards Futsal Dribbling Speed Result in High School Teams in Blora Regency. *Journal Unnes*, 10(1), 75–88.
- Pratama, D. I., Sugiyanto, S., & Sihombing, S. (2020). Efektifitas Terapi Massage Terhadap Cedera Olahraga Nyeri Tumit Dan Nyeri Otot Tibialis Pada Atlet Futsal SMPN 18 Kota Bengkulu. *SPORT GYMNASTICS: Jurnal Ilmiah Pendidikan Jasmani*. <https://doi.org/10.33369/gymnastics.v1i2.12805>
- Rozi, M. F., Resmana, R., Selviani, I., Okilanda, A., Sumantri, R. J., Suganda, M. A., & Suryadi, D. (2023). Imagery and Agility Training: How do They Affect the Reaction Ability of Futsal Goalkeepers? *Physical Education Theory and Methodology*, 23(3), 325–332. <https://doi.org/10.17309/tmfv.2023.3.02>
- Rubiyatno, Perdana, R. P., Fallo, I. S., Arifin, Z., Nusri, A., Suryadi, D., Suganda, M. A., & Fauziah, E. (2023). Analysis of differences in physical fitness levels of extracurricular futsal students: Survey studies on urban and rural environments. *Pedagogy of Physical Culture and Sports*, 27(3), 208–214. <https://doi.org/10.15561/26649837.2023.0304>
- Santos, I. A. Dos, Lemos, M. de P., Coelho, V. H. M., Zagatto, A. M., Marocolo, M., Soares, R. N., Barbosa Neto, O., & Mota, G. R. (2020). Acute Photobiomodulation Does Not Influence Specific High-Intensity and Intermittent Performance in Female Futsal Players. *International Journal of Environmental Research and Public Health*, 17(19). <https://doi.org/10.3390/ijerph17197253>
- Silva, A. F., González-Fernández, F. T., Oliveira, R., Clemente, F. M., Bezerra, P., Hung, C. H., Chiu, Y. W., Kuo, C. D., & Chen, Y. S. (2022). Selected vs. Non-Selected under-20 National Futsal Players: Differences between Physical Performance and Training Intensity Experienced in Training Camps. *Biology*. <https://doi.org/10.3390/biology11030434>
- Stubbs-Gutierrez, A., & Medina-Porqueres, I. (2021). Anthropometric characteristics and physical fitness in elite futsal male players. A systematic review. In *Movement and Sports Sciences - Science et Motricite*. <https://doi.org/10.1051/sm/2020011>
- Sukmawarti, A., Akbar, D., & Doewes, M. (2019). Hubungan Somatotipe dan Passing Accuracy Pemain Futsal AFK Sukoharjo. *Jurnal Penelitian Kesehatan*, 8(2), 50–56. <http://journal.stikvinc.ac.id/index.php/jpk/article/view/78>
- Suryadi, D. (2022). Analisis kebugaran jasmani siswa: Studi komparatif antara ekstrakurikuler bolabasket dan futsal. *Edu Sportivo: Indonesian Journal of Physical Education*, 3(2), 100–110. [https://doi.org/10.25299/es:ijope.2022.vol3\(2\).9280](https://doi.org/10.25299/es:ijope.2022.vol3(2).9280)
- Suryadi, D., & Rubiyanto. (2022). Kebugaran Jasmani Pada Siswa Yang Mengikuti Ekstrakurikuler Futsal. *Jurnal Ilmu Keolahragaan*, 5(1), 1–8. <https://doi.org/10.26418/jilo.v5i1>



- Suryadi, D., & Rubiyatno. (2022). Kebugaran jasmani pada siswa yang mengikuti ekstrakurikuler futsal. *Jurnal Ilmu Keolahragaan*, 5(1), 1–8. <https://doi.org/10.26418/jilo.v5i1.51718>
- Suryadi, D., Suganda, M. A., Sacko, M., Samodra, Y. T. J., Rubiyatno, R., Supriatna, E., Wati, I. D. P., & Okilanda, A. (2023). Comparative Analysis of Soccer and Futsal Extracurriculars: A Survey Study of Physical Fitness Profiles. *Physical Education and Sports: Studies and Research*, 2(1), 59–71. <https://doi.org/10.56003/pessr.v2i1.182>
- Wijaya Kusuma, I. D. M. A. (2021). Teknik yang paling dominan pada pertandingan futsal putra profesional. *Jurnal Keolahragaan*, 9(1), 18–25. <https://doi.org/10.21831/jk.v9i1.31853>

