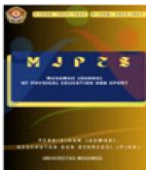
Musamus Journal of Physical Education and Sport (MJPES)
http://ejournal.unmus.ac.id/index.php/physical
Volume 8, No. 3, July 2026 , Pg. 1244-124
DOI: 10.35724/mjpes.v8i3.7996



Basic Badminton Stroke-Skill Profile of Vocational High School Extracurricular Participants: A Descriptive Survey

Emanuel Perlindungan Daeli[1]* and Eka Abdurrahman[2]

[1]Sekolah Tinggi Olahraga dan Kesehatan Bina Guna, Medan, Indonesia
[2]Sekolah Tinggi Olahraga dan Kesehatan Bina Guna, Medan, Indonesia

Corresponding Author: [emanuel12@gmail.com]

Abstract

Objectives: This study described the composite proficiency of five basic badminton strokes among students participating in the badminton extracurricular program at SMK TR 2 Sinar Husni.

Materials and Methods: A quantitative cross-sectional descriptive survey was conducted with 20 extracurricular participants. Five field tests were administered: French's Short Service Test, Scott's Long Service Test, French's Clear Test, Saleh Anasir's Smash Test, and James Poole's Dropshot Test. Test scores were summed into a composite stroke-skill score. Descriptive statistics and mean–standard deviation category norms were used to summarize performance.

Results: Composite scores ranged from 239 to 352 (mean = 296.50, SD = 30.34; median = 300.50). One student (5%) was classified as very high, five (25%) as high, six (30%) as moderate, seven (35%) as low, and one (5%) as very low. Thus, eight students (40%) were in the low or very-low categories, while six (30%) were high or very high.

Conclusions: The group displayed heterogeneous basic stroke proficiency, with the largest single category being low. Coaches should use item-level results to identify whether service, clear, smash, or dropshot requires priority practice; increase high-quality shuttle contacts; apply progressive multi-shuttle and target-based drills; and repeat the same standardized battery to monitor development.

Keywords: badminton; extracurricular sport; skill assessment; stroke accuracy; students

Introduction

Extracurricular sport provides students with opportunities to extend learning beyond regular physical education, develop specialized skills, and participate in structured practice aligned with their interests. In badminton, regular participation can support physical fitness, perceptual–motor coordination, decision-making, and social engagement. These benefits depend on the quality and progression of training; attendance or match play alone does not guarantee technically effective strokes.

Badminton requires players to control shuttle trajectory under severe temporal and spatial constraints. Service initiates each rally, clear or lob moves an opponent toward the rear court, dropshot changes pace and draws the opponent forward, and smash provides a principal attacking option. Each stroke requires coordinated grip, preparation, racket acceleration, contact point, body rotation, recovery, and accuracy. Testing these skills separately can therefore provide a practical profile of technical foundations.

Standardized assessment is valuable for at least three reasons. First, it makes performance expectations explicit. Second, it identifies variation that may be hidden during free play. Third, repeated assessment allows coaches to evaluate whether training transfers to measurable accuracy or consistency. Chau (2020) used tests of dropshots, clears, drives, and serves to monitor technique development in high-school badminton teams and reported that some, but not all, skills improved after training. This finding illustrates why a multi-item profile is more informative than a single global judgment.

Training studies also show that stroke skills are modifiable. An eight-week multi-ball program improved clear, dropshot, smash, and serve performance among novice boys (Li & Hongsaenyatham, 2023). Game-based and multishuttle methods may provide repeated, varied contacts while maintaining engagement. Technical performance is also supported by physical capacities: endurance and agility have been associated with badminton playing skill among extracurricular participants (Pamungkas et al., 2022), and a systematic review indicates that core-strength training can improve selected badminton performance outcomes (Ma et al., 2024).

At SMK TR 2 Sinar Husni, badminton training is held weekly and includes short serve, long serve, lob/clear, smash, and dropshot practice. Preliminary observation suggested inconsistent accuracy, with some shots entering the net or landing outside the court. However, no consolidated five-stroke profile had been available for planning. The present study therefore aimed to describe the composite basic stroke proficiency of all 20 students participating in the extracurricular program. The results were intended as a diagnostic baseline for differentiated coaching and follow-up measurement.

Musamus Journal of Physical Education and Sport (MJPES)
http://ejournal.unmus.ac.id/index.php/physical
Volume 8, No. 3, July 2026 , Pg. 1244-124
DOI: 10.35724/mjpes.v8i3.7996

Materials and Methods

Study Design

This study used a quantitative, cross-sectional descriptive survey design. It characterized current basic badminton stroke performance without testing an intervention or causal hypothesis. Data were collected during the extracurricular program at SMK TR 2 Sinar Husni, Indonesia.

Study Participants

The participants were all 20 students enrolled in the badminton extracurricular program at the time of testing. The source manuscript did not report exact age, grade, sex distribution, playing experience, attendance history, dominant hand, injury status, or competitive level. These characteristics should be retrieved from the original records and included before journal submission because they affect skill interpretation and external validity.

Study Organization and Instruments

Five stroke-accuracy or performance tests were administered: (1) French's Short Service Test (reported reliability = 0.80; validity = 0.66), (2) Scott's Long Service Test (reliability = 0.77; validity = 0.54), (3) French's Clear Test (reliability = 0.98; validity = 0.60), (4) Saleh Anasir's Smash Test (reliability = 0.89; validity = 0.926), and (5) James Poole's Dropshot Test (reliability = 0.89; validity = 0.926). The five raw results were combined into a total score for each participant.

The archived manuscript did not provide field diagrams, target dimensions, shuttle-feeding procedures, trial counts, warm-up, rest interval, scoring direction, assessor training, equipment specification, or the source in which the listed reliability and validity coefficients were established. These details must be restored from the original test manuals before submission. Test administration should be standardized because feed consistency, target location, and trial number can materially affect technical scores. Contemporary observational work also emphasizes explicit operational definitions and reliable coding of technical actions (Torres-Luque et al., 2020).

Statistical Analysis

Individual total scores were summarized using minimum, maximum, arithmetic mean, sample standard deviation, and median. The verified values were minimum = 239, maximum = 352, mean = 296.50, sample SD = 30.34, and median = 300.50. Category limits were derived from the mean and standard deviation: very high (>M + 1.5SD; >342.01), high (>M + 0.5SD to M + 1.5SD; >311.67–342.01), moderate (>M − 0.5SD to M + 0.5SD; >281.33–311.67), low (>M − 1.5SD to M − 0.5SD; >250.99–281.33), and very low (≤M − 1.5SD; ≤250.99). Frequencies and percentages were calculated for each category. Microsoft Excel was used in the original analysis. No inferential statistics were applied.

Ethical Considerations

The source manuscript did not state an ethics committee, approval number, school authorization, informed-consent procedure, parental permission for minors, privacy protection, or safety protocol. The authors must verify and insert these details before submission.

Results

All 20 participants completed the five-test battery. Composite scores spanned 113 points, from 239 to 352. The mean was 296.50 (SD = 30.34), and the median was 300.50. The median reported in the source draft (274) was recalculated from the 20 individual scores and corrected.

Table 1. Descriptive statistics for composite basic stroke-skill scores (n = 20)

Minimum	Maximum	Mean	SD	Median
239	352	296.50	30.34	300.50

Table 2 shows the categorical distribution. Seven students (35%) were classified as low, the largest single group. Six students (30%) were moderate, five (25%) were high, one (5%) was very high, and one (5%) was very low.

Table 2. Distribution of composite basic stroke-skill categories (n = 20)

No.	Score interval	Category	Frequency	Percentage
1	>342.01	Very high	1	5%
2	>311.67–342.01	High	5	25%
3	>281.33–311.67	Moderate	6	30%
4	>250.99–281.33	Low	7	35%
5	≤250.99	Very low	1	5%
	—	**Total**	**20**	**100%**

When categories were combined, eight students (40%) were low or very low, six (30%) were moderate, and six (30%) were high or very high. The distribution therefore indicates meaningful heterogeneity rather than uniformly low performance.

Musamus Journal of Physical Education and Sport (MJPES)
http://ejournal.unmus.ac.id/index.php/physical
Volume 8, No. 3, July 2026 , Pg. 1244-124
DOI: 10.35724/mjpes.v8i3.7996

Because only total scores were preserved in the table, the results cannot identify which of the five strokes most strongly contributed to each student's classification.

Discussion

The study identified a heterogeneous basic badminton stroke profile among extracurricular participants. The largest category was low (35%), and 40% of students were low or very low. At the same time, 30% reached high or very-high classifications. This pattern suggests that a single uniform training plan may not match the needs of the group. Some students require foundational work on contact and directional control, whereas others may be ready for movement-integrated and tactically constrained practice.

The findings are comparable to descriptive and longitudinal evidence showing that badminton techniques do not develop evenly. Chau (2020) assessed seven basic techniques in high-school teams and found significant progress in straight dropshot, longitudinal high clear, and short serve, but not in cross-court clear, drives, or long serve. The implication for the current profile is that one composite score can conceal stroke-specific differences. Item-level reporting is essential because service, clear, smash, and dropshot impose different accuracy, force, timing, and movement demands.

Structured, high-contact practice is a practical response. Li and Hongsaenyatham (2023) found significant improvements in clear, dropshot, smash, and serve across an eight-week multi-ball program delivered three times per week. Multi-shuttle feeding can increase the number of purposeful contacts, stabilize task conditions for beginners, and allow rapid feedback. For the present extracurricular group, coaches could use target zones, fixed-to-variable feeds, and progressive movement demands, then transfer the stroke into conditioned rallies.

Physical qualities should support rather than replace technical learning. Pamungkas et al. (2022) reported relationships between endurance, agility, and badminton playing skills among extracurricular students. A systematic review found that core-strength training can improve balance, stability, and movement-position hitting in badminton players (Ma et al., 2024). However, physical conditioning alone will not correct an inaccurate racket path, late contact point, or unsuitable grip. Technical cues, representative feeding, and accuracy-based feedback remain necessary.

The lower-performing group may also have received insufficient individual practice during weekly sessions. The source manuscript described limited shuttlecocks, shared rackets, and a net and court that required maintenance. These observations were not quantified and therefore cannot be treated as tested causes, but they identify plausible implementation issues for program audit. Limited equipment reduces repetitions and increases waiting time; non-standard net height changes the task; and a slippery floor constrains safe footwork. Before attributing performance to motivation or ability, the school should document attendance, equipment-to-student ratio, active practice time, and session content.

Training should also connect accuracy with perception and movement. Badminton strokes in a static test differ from shots executed after split-step, court movement, opponent information, and time pressure. Torres-Luque et al. (2020) developed a reliable observational instrument for technical and tactical actions in singles badminton, illustrating the value of complementing closed tests with game-based observation. Visual reaction training has likewise improved special performance capacities in badminton players (Kuo et al., 2022). A balanced assessment system should therefore include both standardized target tests and observation of decision-linked execution.

The corrected median (300.50) also changes the descriptive interpretation. It lies above the mean (296.50), consistent with a few lower scores pulling the mean downward. Nevertheless, mean–SD categories are sample-relative: a "high" score means high within this group, not necessarily high against age-, sex-, or competition-specific external standards. The classifications should be used for local coaching decisions rather than broad claims about vocational-school badminton proficiency.

Practical Implications

Coaches should retain each participant's five item scores and construct an individual skill profile. Students in the low and very-low composite categories should receive additional deliberate practice, but priorities should be stroke specific. Short serve practice can emphasize repeatable contact and narrow target zones; long serve and clear can progress from stationary force control to rear-court movement; dropshot can combine identical preparation with reduced shuttle speed; and smash can develop sequencing, contact height, and placement before maximal power. Reassessment should use the same protocol, equipment, feeder instructions, and number of attempts.

Limitations

This study was descriptive, cross-sectional, and limited to 20 participants from one school. It cannot identify causes of low scores or determine whether the extracurricular program improved performance. Demographic and training-exposure information was unavailable. The composite approach obscured item-level strengths, and the source draft did not provide full test protocols or primary references for reported psychometric coefficients. Category thresholds were derived from the present sample rather than an external normative population. Future studies should report each stroke separately, include

confidence intervals and test–retest reliability, document training exposure and facilities, and evaluate a structured intervention with a comparison group.

Conclusions

Composite basic badminton stroke scores among 20 extracurricular participants ranged from 239 to 352, with a mean of 296.50 (SD = 30.34) and a corrected median of 300.50. One student (5%) was very high, five (25%) high, six (30%) moderate, seven (35%) low, and one (5%) very low. The results demonstrate varied rather than uniform technical readiness. Coaching should be differentiated using item-level profiles, increased high-quality shuttle contacts, progressive target and multi-shuttle drills, adequate equipment, and periodic standardized reassessment. The findings constitute a local baseline and should not be generalized beyond the study setting.

Acknowledgments

The authors thank the principal, extracurricular coach, participating students, and school community of SMK TR 2 Sinar Husni, as well as Sekolah Tinggi Olahraga dan Kesehatan Bina Guna, Medan, for supporting the study.

Author Contributions

Emanuel Perlindungan Daeli: conceptualization, methodology, investigation, project administration, and writing—original draft. Eka Abdurrahman: data curation, formal analysis, interpretation, and writing—review and editing. Both authors approved the final manuscript and accept responsibility for the integrity of the work.

Conflict of Interest

The authors declare no conflict of interest.

Funding

This research received no external funding.

Data Availability

The aggregate and anonymized total-score data supporting the findings are presented in this article. Item-level data may be made available by the corresponding author upon reasonable request, subject to verification of the original records and applicable ethical requirements.

References

Chau, V. H. (2020). Assessment of male students' basic badminton technique development at high schools. The Open Sports Sciences Journal, 13, 60–67. https://doi.org/10.2174/1875399X02013010060

Kuo, K.-P., Liao, C.-C., & Kao, C.-C. (2022). Improving special ability performance of badminton players through a visual reaction training system. Healthcare, 10(8), 1454. https://doi.org/10.3390/healthcare10081454

Li, C., & Hongsaenyatham, P. (2023). The effects of multi-ball training program on badminton skills of male students aged between 9–11 years. International Journal of Sociologies and Anthropologies Science Reviews, 3(5), 111–118. https://doi.org/10.60027/ijsasr.2023.3283

Ma, S., Soh, K. G., Japar, S. B., Liu, C., Luo, S., Mai, Y., & Wang, X. (2024). Effect of core strength training on the badminton player's performance: A systematic review and meta-analysis. PLOS ONE, 19(6), e0305116. https://doi.org/10.1371/journal.pone.0305116

Malwanage, K. T., Senadheera, V. V., & Dassanayake, T. L. (2022). Effect of balance training on footwork performance in badminton: An interventional study. PLOS ONE, 17(11), e0277775. https://doi.org/10.1371/journal.pone.0277775

Pamungkas, G., Prasetyo, Y., & Komari, A. (2022). The relationship of endurance and agility with badminton playing skills of badminton extracurricular students at SMA N 1 Seyegan. In Proceedings of COIS-YISHPESS 2021. https://doi.org/10.2991/ahsr.k.220106.032

Torres-Luque, G., Blanca-Torres, J. C., Giménez-Egido, J. M., Cabello-Manrique, D., & Ortega-Toro, E. (2020). Design, validation, and reliability of an observational instrument for technical and tactical actions in singles badminton. Frontiers in Psychology, 11, 582693. https://doi.org/10.3389/fpsyg.2020.582693

Yuliawan, D., & Sugiyanto, F. X. (2014). Pengaruh metode latihan pukulan dan kelincahan terhadap keterampilan bermain bulutangkis atlet tingkat pemula. Jurnal Keolahragaan, 2(2), 145–154. https://doi.org/10.21831/jk.v2i2.2610