



Implementation of Drill Method to Improve Forehand Stroke Skills in Table Tennis Learning

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Abstract

This study aims to determine the improvement of forehand stroke skills in table tennis learning through the implementation of the drill method. This study used Classroom Action Research (CAR) which was carried out in two cycles, with stages including planning, implementation, observation, and reflection. The subjects of the study were all 21 students of grade XI IPA. The instrument used to measure the psychomotor aspect was a forehand stroke skill performance test. Data were analyzed using a percentage technique based on the level of student learning completion. The results showed that in cycle I, student learning completion reached 71.43% or 15 out of 21 students, so it did not meet the set standard of 75%. In cycle II, learning completion increased to 90.47% or 19 out of 21 students. Thus, the implementation of the drill method can improve forehand stroke skills in table tennis learning.



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Introduction

Physical education is an integral part of the educational process that plays a role in developing students' physical fitness, motor skills, cognitive abilities, social attitudes, and healthy lifestyle behaviors through planned and systematic physical activities ([García-Hermoso et al., 2020](#); [Dudley et al., 2022](#)). In the context of school learning, physical education is not only aimed at achieving fitness, but also at improving motor skills, physical literacy, and physical activity habits that support students' active participation throughout their lives ([McDonough et al., 2020](#); [Piotrowski et al., 2025](#)). One of the relevant subjects taught in physical education is table tennis, as this sport requires hand-eye coordination, quick reflexes, precision of movement, agility, concentration, and good body control in fast-paced game situations ([Safari & Saptani, 2019](#); [Hisyam & Putri, 2023](#)). Table tennis is also a net sport that requires mastery of basic techniques, particularly the forehand drive, because success in the game is heavily influenced by students' ability to control the direction of their shots, aim accurately, coordinate their movements, and maintain consistency in basic techniques throughout the learning process ([Gani et al., 2025](#)). In addition, hand-eye coordination plays a crucial role in the accuracy of table tennis strokes, particularly in the forehand technique, as students must be able to precisely adjust their body position, the timing of ball contact, and the direction of the stroke amid the fast pace of the game ([Safari & Saptani, 2019](#)).

In table tennis, the forehand stroke is one of the fundamental techniques that is important to master because it is often used to initiate an attack, return the ball, control the direction of play, and establish an effective playing strategy ([Liloi et al., 2026](#)). A good forehand stroke requires a proper ready position, the correct racket grip, coordinated arm swing, body rotation, ball contact in front of the body, the appropriate racket angle, and controlled follow-through ([Syamsudin, 2024](#)). Forehand skills cannot be mastered through verbal explanations alone; they must be developed through repeated practice, technical corrections, and the internalization of movement patterns so that students can execute the shot consistently in both training and match situations ([Abdul et al., 2024](#)). Therefore, success in learning the forehand stroke is greatly influenced by the teaching methods used by the teacher in organizing drills, providing feedback, and creating sufficient practice opportunities for all students ([Iroth et al., 2025](#)).

A common problem in teaching table tennis in schools is students' poor mastery of basic techniques, particularly in terms of proper body positioning, movement coordination, ball contact, shot direction, and consistency in executing forehand shots (Nurhaifani et al., 2024). This situation may arise because students have varying levels of playing experience, limited practice time, a number of facilities that is not always proportional to the number of students, and a lack of variety in training methods that would allow students to effectively repeat movements (Mertler, 2024). In motor skills learning, a lack of practice opportunities can hinder the development of proper movement patterns, as sports skills require gradual practice, feedback, and meaningful repetition (Qomarrullah et al., 2026). In addition, students who have not yet mastered the basic techniques tend to make repeated mistakes, such as hitting the ball too hard, having an uncontrolled racket swing, poor footwork, and uncontrolled follow-through, resulting in learning outcomes that fall short of the expected proficiency standards.

One method that can be used to address this issue is the drill method, which is a training method that emphasizes the structured, systematic, and continuous repetition of movements to improve skill mastery (Mahendra & Wulandari, 2024). The drill method is appropriate for teaching sports skills because it gives students the opportunity to perform movements repeatedly, correct technical errors, improve motor coordination, and develop more stable motor habits (Darma et al., 2026). In table tennis instruction, drills can include repeating forehand strokes from specific positions, partner drills, hitting the ball toward a target, wall-bounce drills, multi-ball drills, or other variations tailored to the students' abilities and the school's facilities (Agustian et al., 2026). Repetitive practice accompanied by feedback allows students to identify movement errors, adjust their body position, correct their club angle, and gradually improve their shot accuracy (Masrun et al., 2025).

The results of the study indicate that repetitive movements, exercise variation, and feedback play a crucial role in the acquisition of motor skills, including the forehand stroke in table tennis. Previous research has demonstrated that structured drills, such as multiball exercises, along with the application of appropriate teaching methods, can improve the accuracy and learning outcomes of the forehand drive stroke. Therefore, table tennis instruction requires strategies that provide ample practice opportunities, progressive training, and ongoing evaluation.

The drill method is considered relevant for implementation because it emphasizes systematic, repetitive, and targeted practice in line with the characteristics of motor skill learning in sports. Through Classroom Action Research, the application of this method can be directly assessed based on student conditions, the learning process, performance test results, and the level of learning mastery. Thus, this study aims to determine whether the implementation of the drill method can improve forehand stroke skills in table tennis instruction and provide more effective alternative teaching strategies for physical education teachers.

Methods

This study employs a Classroom Action Research (CAR) approach because it aims to improve the learning process and enhance forehand stroke skills in table tennis through the application of drill methods. CAR was chosen because it is suitable for directly addressing learning issues in the classroom, particularly when teachers or researchers wish to observe changes in students' abilities after implementing specific instructional interventions. This study was conducted in two cycles, each consisting of the planning stage, implementation of actions, observation or evaluation, and reflection. This cyclical model allows the researcher to identify learning weaknesses in the first cycle and then make improvements in the next cycle so that students' learning outcomes can improve. This is in line with research (Gani, Podungge, dan Ilham, 2025) which shows that the application of the drill method in table tennis instruction can improve students' basic motor skills in the forehand drive through systematic and repetitive practice.

This study was conducted at Kendari State High School 10, with the research subjects being all 21 students in Class XI IPA 1. Since all students in that class were included as research subjects, the sampling technique used was total sampling. Data collection was carried out through observation and learning outcome tests. Observation was used to assess the activities of the teacher and students during the learning process using the drill method, while learning outcome tests were used to measure students' abilities in the cognitive, affective, and psychomotor domains. The cognitive aspect was measured through students' understanding of the forehand stroke material; the affective aspect was assessed through students' attitudes during learning; and the psychomotor aspect was assessed through a forehand stroke performance test covering the starting posture, execution of the movement, and final

posture.

The data collected were analyzed using descriptive quantitative and qualitative methods. Quantitative data were derived from students' learning outcomes, while qualitative data were derived from observations of teacher and student activities during the learning process. Students' final grades were calculated based on a combination of three assessment aspects: psychomotor (50%), cognitive (30%), and affective (20%). This study was deemed successful if at least 75% of students achieved a score of at least 70 and at least 75% of the teacher and student activities were carried out during the learning process. These indicators are used to assess the overall success of the intervention, both in terms of learning outcomes and the learning process. Research by (Siregar and Priono, 2024) also indicates that teaching table tennis through classroom interventions can improve students' forehand drive skills when implemented through a continuous process of practice, observation, evaluation, and refinement.

Results

The results of the study indicate that the application of the drill method can increase student activity, teacher activity, and learning outcomes for the forehand stroke in table tennis instruction. The study was conducted in two cycles: Cycle I and Cycle II. Each cycle consisted of the following stages: planning, implementation, observation/evaluation, and reflection.

The increase in student activity was evident from the observations made during the learning process. In Cycle I, students met 7 out of 10 activity indicators, representing a 70% achievement rate. These results indicate that student activity had not yet met the established success criteria. After making adjustments in Cycle II, all student activity indicators were met—10 out of 10—representing a 100% achievement rate.

Table 1. Percentage of Student Activity in Cycle I and Cycle II

No.	Description	Cycle I	Cycle II
1	Implemented indicators	7	10
2	Non-implemented indicators	3	0
3	Total indicators	10	10
4	Implementation percentage	70%	100%
5	Criteria	Not achieved	Achieved

Based on Table 1, student engagement increased by 30% from Cycle I to Cycle II. In Cycle I, some students were still not very active in learning; they were hesitant to express their opinions, did not collaborate optimally, and did not fully pay attention to their peers when practicing the forehand stroke. After instructional improvements were made using the drill method in Cycle II, students became more active, enthusiastic, able to collaborate, willing to ask questions, and more skilled at repeatedly practicing the forehand stroke.

Teacher activity also increased from Cycle I to Cycle II. In Cycle I, 8 out of 11 teacher activity indicators were implemented, representing a 72.73% implementation rate. These results indicate that teacher activity had not yet met the success criteria. After reflection and instructional improvements in Cycle II, all teacher activity indicators were met—11 out of 11 indicators—with a 100% implementation rate.

Table 2. Percentage of Teacher Activity in Cycle I and Cycle II

No.	Description	Cycle I	Cycle II
1	Implemented indicators	8	11
2	Non-implemented indicators	3	0
3	Total indicators	11	11
4	Implementation percentage	72.73%	100%
5	Criteria	Not achieved	Achieved

Based on Table 2, teacher activity increased by 27.27% from Cycle I to Cycle II. In Cycle I, the teacher did not fully maximize efforts to motivate students, provide equal guidance to all students, select students to demonstrate movements, and provide feedback on students' technical errors. In Cycle II, the teacher improved the learning process by motivating students, providing comprehensive guidance, giving students opportunities to demonstrate movements, and offering feedback during practice sessions.

Improvements were also evident in student learning outcomes. In Cycle I, 15 out of 21 students (71.43%) achieved mastery, while 6 students (28.57%) did not. These results did not yet meet the research's success indicator, which is that at least 75% of students must score ≥ 70 . In Cycle II, the number of students who met the learning standards increased to 19 students, or 90.47%, while the number of students who did not meet the standards decreased to 2 students, or 9.53%.

Table 3. Students' Learning Outcome Mastery in Cycle I and Cycle II

No.	Learning Outcomes	Cycle I	Percentage	Cycle II	Percentage
1	Achieved mastery	15 students	71.43%	19 students	90.47%
2	Did not achieve mastery	6 students	28.57%	2 students	9.53%
3	Total students	21 students	100%	21 students	100%

Based on Table 3, student learning achievement increased from 71.43% in Cycle I to 90.47% in Cycle II. Thus, there was a 19.04% increase in learning achievement. This increase indicates that the drill method has a positive impact on forehand stroke skills in table tennis instruction.

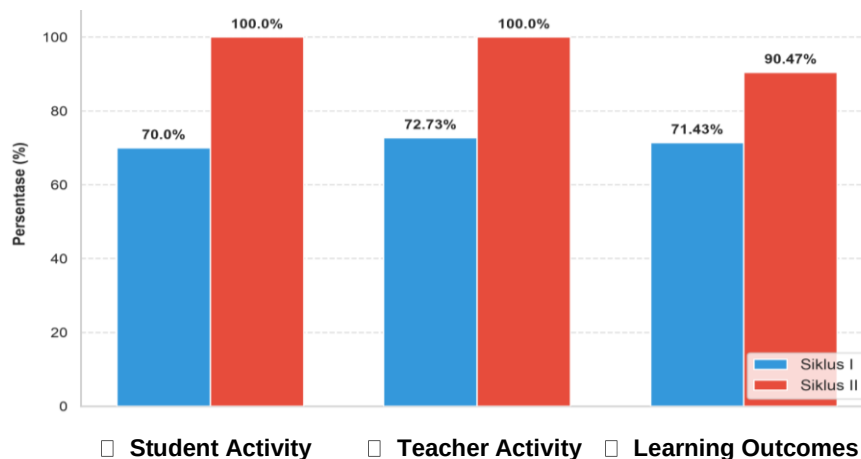


Figure 1. Improvement in Student Activity and Learning Outcomes

Figure 1 shows improvements in all observed aspects. Student activity increased from 70% in Cycle I to 100% in Cycle II. Teacher activity increased from 72.73% to 100%. Meanwhile, student learning achievement increased from 71.43% to 90.47%. Overall, the research results indicate that the application of the drill method is effective in improving forehand stroke skills in table tennis instruction. This improvement occurred because the drill method provides students with the opportunity to repeat movements, correct technical errors, enhance teamwork, and build self-confidence in executing the forehand stroke. In Cycle II, the research success indicators were met because student learning achievement reached 90.47%, exceeding the established achievement standard—namely, 75% of students scoring at least 70. Thus, the intervention was deemed successful and did not need to be continued into the next cycle.

Discussion

The results of this study indicate that implementing the drill method can address the issue of poor forehand stroke skills in table tennis instruction. Students' skill improvement occurs not only through the repetition of movements but also because the practice is conducted in a targeted, step-by-step manner and is accompanied by teacher guidance. In learning sports techniques, students need sufficient practice opportunities so that movement patterns can be properly established. The drill method allows students to consistently repeat the forehand stroke, from the starting position,

through the execution of the stroke, to the follow-through. This is consistent with research [Gani et al., \(2025\)](#) which states that the drill method effectively improves basic forehand drive technique because students gain repetitive and systematic movement experience.

The improvement in learning outcomes in Cycle II indicates that the drill method was able to address the weaknesses that emerged in Cycle I. In the early stages, some students still lacked confidence, were not very active, and were not yet able to execute a forehand stroke with proper technique. Errors observed included unbalanced body positioning, a poorly directed racket swing, inaccurate ball contact, and follow-through movements that were not performed correctly. After instruction was refined through more structured practice, more consistent guidance, and feedback from the teacher, students began to demonstrate improved skills. These findings reinforce the research results [Hisyam & Putri, \(2023\)](#) which indicates that students' forehand drive skills in table tennis can improve when they are given the opportunity to practice actively through guided instruction.

An important aspect of applying the drill method in this study was the increased student engagement during the learning process. Students were not merely recipients of the material but were directly involved in practicing, repeating, observing, and correcting their forehand strokes. This active engagement is a crucial factor in physical education because learning success cannot be measured solely by theoretical understanding but also by students' ability to apply techniques in practice. [Safari & Saptani, \(2019\)](#) explains that hand-eye coordination plays a crucial role in the accuracy of table tennis strokes. Therefore, repetitive practice through drills helps students align their observation of the ball's trajectory with their hand movements when executing a stroke.

In addition to improving technical skills, the drill method also has an impact on students' learning attitudes. Students become more disciplined, are more willing to try new things, work together, and are more confident when executing forehand strokes. This occurs because the practice takes place in an active and repetitive learning environment, giving students more opportunities to correct their mistakes. According to [Gani et al., \(2025\)](#) The study found that success in learning the forehand drive is influenced by a teaching approach that adapts to students' abilities and allows them

to develop according to their skill levels. Thus, the drill method can be an effective teaching strategy for improving basic table tennis skills in schools.

The findings of this study also indicate that the teacher's role is crucial to the success of the drill method. In Cycle II, teachers were more effective in motivating students, demonstrating movements, guiding students who were struggling, and evaluating technique execution. These improvements in teacher activities led to increased student engagement and better learning outcomes. In other words, the drill method will be more effective if teachers are able to manage the learning process well, provide clear instructions, and give immediate feedback to students. This is consistent with research [Kadeira & Hafidz, \(2021\)](#) which shows that programmed and repetitive practice can improve the accuracy of forehand and backhand drives in table tennis.

Based on this analysis, a new and important aspect of this study is that drill methods serve not only as repetitive practice but also as a learning strategy capable of simultaneously enhancing students' activity levels, skills, and learning outcomes. This method is suitable for use in table tennis instruction because the characteristics of the forehand stroke require motor habit formation, coordination, accuracy, and consistency. Thus, the research objective of improving forehand stroke skills through the implementation of the drill method has been achieved. The application of this method can serve as an alternative for physical education teachers in addressing low mastery of basic table tennis techniques, particularly regarding the forehand stroke.

Conclusion

Based on the research findings and discussion, it can be concluded that the implementation of the drill method is effective in improving forehand stroke skills in table tennis instruction. This method provides students with the opportunity to practice repeatedly, purposefully, and systematically, making it easier for them to understand the stages of movement, correct technical errors, and improve shot accuracy. Through consistent practice, students become more active, confident, and skilled in executing forehand strokes.

The application of the drill method also helps teachers create a more effective learning process. Teachers can provide direct instruction, demonstrations, guidance, and feedback to students during the practice session. Thus, learning is not only centered on the delivery of material but also emphasizes students' active involvement

in practicing motor skills. Overall, the research objectives have been achieved because the drill method has been proven to improve learning outcomes for the forehand stroke in table tennis. Therefore, the drill method can be used as an alternative learning strategy in physical education, particularly for basic table tennis techniques, as it helps students master motor skills more effectively and meaningfully.

References

- Abdul, P., Pomatahu, A. R., & Podungge, R. (2024). Kemampuan Pukulan Forehand Drive Pada Permainan Tenis Meja Melalui Metode Praktik Lapangan. *Jambura Arena Sport*, 1(2), 108–116. <https://doi.org/10.37905/jas.v1i2.23176>
- Agustian, M. A., Nugram, A. B. K., Wahyudi, H., & Saputra, Y. D. (2026). Pengaruh Metode Drill Fixed Target Terhadap Akurasi Pukulan Forehand Groundstroke Atlet Pickleball Unesa. *Jurnal Ilmiah STOK Bina Guna Medan*, 14(1), In-Press. <https://doi.org/10.55081/jsbg.v14i1.5721>
- Darma, A., Al Fikri, M., & Putri, S. M. (2026). Perbandingan Metode Demonstrasi dan Metode Drill terhadap peningkatan Keterampilan Renang Gaya Punggung pada Siswa SMA 123 Kabupaten Tangerang. *Jurnal Harmoni Abdi Masyarakat*, 2(1), 1–11. <https://journal.harpro.id/juham/article/view/46>
- Dudley, D., Mackenzie, E., Van Bergen, P., Cairney, J., & Barnett, L. (2022). What drives quality physical education? A systematic review and meta-analysis of learning and development effects from physical education-based interventions. *Frontiers in Psychology*, 13, 799330. <https://doi.org/10.3389/fpsyg.2022.799330>
- Gani, S. P. A., Podungge, R., & Ilham, A. (2025). Meningkatkan Teknik Dasar Pukulan Forehand Drive Pada Permainan Tenis Meja Melalui Metode Drill. *Tomini Sports: Jurnal Olahraga*, 2(1), 157–169. <https://doi.org/10.37905/ts:jo.v2i1.33697>
- García-Hermoso, A., Alonso-Martínez, A. M., Ramírez-Vélez, R., Pérez-Sousa, M. Á., Ramírez-Campillo, R., & Izquierdo, M. (2020). Association of physical education with improvement of health-related physical fitness outcomes and fundamental motor skills among youths: a systematic review and meta-analysis. *JAMA Pediatrics*, 174(6), e200223. <https://doi.org/10.1001/jamapediatrics.2020.0223>
- Hisyam, M., & Putri, M. W. (2023). Upaya Meningkatkan Keterampilan Pukulan Forehand Drive Dalam Permainan Tenis Meja Dengan Menggunakan Metode Media Dinding. *Jurnal Olahraga Kebugaran Dan Rehabilitasi (JOKER)*, 3(1), 58–63. <https://doi.org/10.35706/joker.v3i1.7213>
- Iroth, F. I., Humaedi, H., Saldi, M., & Ismail, M. (2025). Meningkatkan Hasil Belajar Pukulan Forehand dalam Permainan Tenis Meja melalui Metode Kooperatif Tipe Stad Pada Peserta Didik Kelas V SD Negeri Inti Loru. *Jurnal Al-Qiyam*, 6(2), 171–175. <https://doi.org/10.33648/alqiyam.v6i2.1208>
- Liloi, D. K., Fajri, M. K., Firmansyah, M. W., & Purwanto, D. (2026). Basic Techniques of Forehand And Backhand Strikes In Table Tennis. *COMPETITOR: Jurnal Pendidikan Kepeleatihan Olahraga*, 18(1), 1397–1406. <https://doi.org/10.26858/cpjok.v18i1.648>
- Mahendra, Y., & Wulandari, L. (2024). Penerapan Metode Drill dalam Pembelajaran Membaca Permulaan Sekolah Dasar Negeri 01 Trimodadi Tahun Pelajaran 2023/2024. *Griya Cendikia*, 9(2), 658–670. <https://doi.org/10.47637/griyacendikia.v9i2.1621>
- Masrun, M., Haryanto, J., & Setiawan, Y. (2025). Pengaruh Latihan Multiball Dan Rally Berpasangan Terhadap Ketepatan Forehand Drive Tenis Meja Pada Siswa

- Ekstrakurikuler Sman 1 Solok Selatan. *Jurnal Gladiator*, 5(3), 363–376.
<https://doi.org/10.24036/gltdor1822011>
- McDonough, D. J., Liu, W., & Gao, Z. (2020). Effects of physical activity on children's motor skill development: a systematic review of randomized controlled trials. *BioMed Research International*, 2020(1), 8160756.
<https://doi.org/10.1155/2020/8160756>
- Mertler, C. A. (2024). *Action research: Improving schools and empowering educators*. Sage publications.
- Nurhaifani, N., Setiawan, Y., & Haryanto, J. (2024). Pengaruh Pengaruh Model Latihan Multiball Terhadap Ketepatan Pukulan Backhand Drive Pada Atlet Tennis Meja Di PTM Sawlin Kota Padang. *Jurnal Gladiator*, 4(5), 1259–1271.
<https://doi.org/10.24036/gltdor1381011>
- Piotrowski, T., Makaruk, H., Tekień, E., Feleszko, W., Kołodziej, M., Albrecht, K., Grela, K., Makuch, R., Werner, B., & Gąsior, J. S. (2025). Fundamental Movement/Motor Skills as an Important Component of Physical Literacy and Bridge to Physical Activity: A Scoping Review. *Children*, 12(10), 1406.
<https://doi.org/10.3390/children12101406>
- Qomarrullah, R., Or, M., Mangolo, E. W., Kristiyandaru, A., & Widyanto, Z. (2026). *Sosial Sains Pendidikan Jasmani: Teori, Konsep, dan Praktik*. Penerbit: Kramantara JS.
- Safari, I., & Saptani, E. (2019). Metode latihan dan koordinasi mata tangan meningkatkan akurasi forehand sidespin service tenis meja. *Jurnal Keolahragaan*, 7(2), 174–181. <https://doi.org/10.21831/jk.v7i2.26788>
- Syamsudin, N. (2024). *Panduan Teknik Forehand Drive dalam Tenis Meja: Meningkatkan Akurasi dan Konsistensi Pemain Pemula*. Penerbit NEM.