



Analysis of Futsal Speed Training to Improve Dribbling and Passing: A Case Study of Extracurricular Students

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Abstract

Study purpose. The low speed ability of students in futsal games is the main background of this study. The study aims to analyze the effectiveness of the futsal speed training model on improving dribbling and passing abilities in extracurricular students.

Material and methods. The study used the research and development method by adapting the simplified steps of Borg & Gall. The instruments used included expert validation sheets, student response questionnaires, and passing and dribbling tests. The research subjects were 10 students for the small-scale trial and 20 students participating in the futsal extracurricular for the large-scale trial. Influence on Passing Ability expert validation showed a percentage of 97.41% with the category of "very feasible". The small and large-scale trials showed positive responses from students with the feasibility category of "good" to "very good".

Results. The results of the study showed an increase in students' speed abilities after being given treatment. Supported by other research, the average pretest passing score of 14.20 increased to 15.73 in the posttest (mean difference 1.53) and the average pretest dribbling score of 19.29 decreased to 17.59 in the posttest (mean difference 1.69) indicating a positive change.

Conclusions. Based on these results, it can be concluded that the developed speed training model is effective in improving the dribbling and passing abilities of high school futsal players. This study recommends the final product as a reference for coaches, Physical Education teachers, and extracurricular instructors in designing structured speed training programs that meet the needs of students.

Keywords: Training Model, Passing, Dribbling, Speed, Futsal, Extracurricular Activities.

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Introduction

Physical education as a component of education as a whole is widely recognized (Chu et al., 2022; Utama, Doewis, et al., 2023; Valle-Muñoz et al., 2025). Physical education learning should not be teacher-centered, but rather student-centered, focusing on the development of the students who receive the content and material (Solehudin et al., 2023; Tomar, 2022). The scope of physical education learning has been structured to enhance the growth and development of three domains: psychomotor, affective, and (Hidayat Cakrawijaya, 2021). The exercises carried out in physical education are effective in improving speed and can be applied in a sports context, including in a futsal game (Barbieri et al., 2016; Prastyo et al., 2017; M. Y. Saputra et al., 2026).

Futsal is a high-intensity team sport that requires commensurate physical abilities to support performance (Ramos-Campo et al., 2016). Futsal requires players to perform sprinting, acceleration, positional changes, and rapid reactions in a short period of time (Albalad-aiguabella et al., 2025). Recent research shows that training programs that focus on speed and other physical components can significantly impact a futsal player's physical abilities (Apriantono et al., 2023; Spyrou et al., 2020). This includes speed, movement, and changes in direction as quickly as possible, as well as reactions to game situations (Sun, Soh, Cao, et al., 2025). The need for appropriate training models to improve speed in futsal is increasingly important, as specifically designed speed training will help students develop essential physical components (Barbieri et al., 2016; Priyambada et al., 2024; Sekulic et al., 2021).

An effective training model should consider training principles such as specificity, variety, progression, and relevance to the demands of futsal (Albalad-aiguabella et al., 2025). This is also applied to sports coaching in extracurricular activities (Gemael & Sari, 2025). Extracurricular futsal activities are an important means for students to develop their talents, technical skills, and physical condition more intensively outside of formal school hours (K. G. Saputra & Mahfud, 2025). Through these activities, students are expected to improve not only technical skills but also physical components that support overall futsal performance (Clemente et al., 2019). Extracurricular activities help students develop according to their needs, potential, talents, and interests through specific activities (Gemael & Sari, 2025). Extracurricular activities are not just a place to channel students' hobbies (Mulloh et al., 2025; Utama, Putri, et al., 2023). If channeled effectively, especially those based on physical activities, they can shape a student's character. Extracurricular activities are implemented with reference to effective management principles, which include planning, organizing, implementing, monitoring, and evaluating (Tursino & Fakhri, 2021). Participation in futsal extracurricular activities can be influenced by peer encouragement, parental encouragement, or other factors. To support this, the school provides a coach who provides appropriate training to help the futsal team develop and achieve success (Agras et al., 2016).

Field observations also show that most athletes still struggle with proper footwork when running, and their responses to game situations are often delayed. Players' reaction time and acceleration, especially in match situations requiring rapid movement, are still very limited. This suboptimal speed capability in futsal is likely due to the lack of training models that suit the characteristics of the game and the physical needs of the students. Futsal games can run smoothly, orderly, and engagingly if players master the elements of the game, including short sprints, zigzag dribbles, ladder drills, interval sprints, shuttle runs, and plyometrics. Given these conditions, a more focused and structured analysis of futsal speed training models is necessary.

Materials and methods

Study participants

The population in this study was all students registered as active members of the futsal extracurricular activity at State Senior High School 6 Bandar Lampung. Based on available data, the futsal extracurricular activity at State Senior High School 6 Bandar Lampung is one

of the most active extracurricular activities and has a significant number of participants. The sample was drawn using purposive sampling (judgmental sampling). This technique was chosen because the researcher wanted to ensure that each sample member met certain criteria relevant to the research objectives and the nature of the intervention provided.

Sample Size:

- Small-Scale Trial: 10 students who met the inclusion criteria.
- Large-Scale Trial: 20 students participating in the futsal extracurricular activity at State Senior High School 6 Bandar Lampung.

Total Sampling (taking the entire available population as a sample) can be used to maximize data representation at each stage.

Study organization

This study aims to analyze the effect of futsal speed training on improving dribbling and passing skills in extracurricular futsal students at State Senior High School 6 Bandar Lampung. The approach used is quantitative research with a quasi-experimental method. ([Arikunto, 2010](#); [Sugiyono, 2017](#)) this method was chosen because the researchers wanted to test a direct causal relationship between the independent variable (speed training) and the dependent variable (dribbling and passing) in a pre-existing subject group setting (natural-born groups) without full randomization.

The research design used was a "One-Group Pretest-Posttest Design." In this design, one group of research subjects is given an initial measurement (pretest) to determine their basic dribbling and passing abilities, then given a treatment program in the form of a speed training program, and then given a final measurement (posttest) to determine changes that occurred after the treatment (Abdul Quddus & Lalu Hulfian, 2025).

This study involved two trial stages: a small-scale trial (10 students) was conducted to assess the initial feasibility of the training program and identify technical challenges. A large-scale trial (20 students) was conducted as the primary implementation of the speed training program for the futsal extracurricular activity at State Senior High School 6 Bandar Lampung. By comparing the O₁ and O₂ results at each stage through appropriate statistical tests, researchers were able to objectively analyze whether speed training significantly improved dribbling and passing skills.

Place and Time of Research

Location: The research will be conducted on the futsal field used for extracurricular futsal activities at State Senior High School 6 Bandar Lampung. This location was chosen based on the consideration that all pretest, treatment, and posttest processes need to be conducted in a controlled and consistent environment. This location also has adequate accessibility for all participants and the availability of standard training facilities.

Small-Scale Trial Phase: Conducted for 4 weeks with a training frequency of 3 times per week (a total of 12 meetings). Large-Scale Trial Phase: Conducted for 8 weeks with a training frequency of 3 times per week. The duration of each training session ranges from 60 to 90 minutes. This schedule is adjusted to the hours of existing futsal extracurricular activities at the school.

Research Instruments

Research instruments are measuring tools used to collect data objectively. In this study, the instruments used must have good levels of validity (accuracy) and reliability (dependability). The two dependent variables to be measured are passing and dribbling.

1. Instruments for Measuring Passing (Passing Test)

To measure passing ability, this study used the Passing-Stopping Test developed by Bambang & Samsudar (2008). This instrument is a basic futsal skills test that has been tested for validity and reliability. According to the test results reported in [Pahlevi's \(2024\)](#) study, the Bambang & Samsudar Passing-Stopping Test had a validity value of 0.783 and a reliability value of 0.824, thus declaring this instrument valid and reliable for use in measuring futsal passing ability.

Procedure for the Passing-Stopping Test:

- Players stand behind the boundary line, 3 meters from the target wall.
- Players pass to the wall within a predetermined target area.
- The ball must stop in the control area after bouncing back from the wall.
- Scores are calculated based on the number of passes successfully executed accurately within 30 seconds.

2. Instrument for Measuring Dribbling (Dribbling Test)

To measure dribbling ability, this study used the Futsal Dribbling Test developed by Dewi & Pakpahan (2018). This instrument has also undergone validation and reliability testing, with a validity value of 2.365 and a reliability value of 0.891, thus meeting the requirements as a good research instrument.

Dribbling Test Implementation Procedure:

- Players dribble the ball past cone-shaped obstacles arranged at specific intervals in a zigzag pattern.
- The test begins at a starting line and finishes after passing all obstacles.
- Scoring is based on the time (in seconds) required to complete the entire course. The faster the time, the better the player's dribbling ability (as a lower time indicates better speed and control).

Table 1. Summary of Research Instruments

Variable	Test Name	Developers	Validity	Reliability	Unit of Measurement
<i>Passing</i>	Passing-Stopping Test	Bambang & Samsudar (2008)	0,783	0,824	Number of accurate passes in 30 seconds
<i>Dribbling</i>	Dribbling Test	Dewi & Pakpahan (2018)	2,365	0,891	Time traveled (seconds)

3. Supporting Instruments

As a complement, this study can refer to other standard instruments, such as those developed by [Pribadi et al. \(2025\)](#) in the article "Development of a test instrument for dribbling and passing skills in futsal players". In a small-scale test, this instrument obtained a dribbling validity of 0.968 and a reliability of 0.979, and a passing validity of 0.910 and a reliability of 0.947; in a large-scale test, the dribbling validity was 0.995 and a reliability of 0.990, and the passing validity was 0.954 and a reliability of 0.977.

Research Implementation Procedure

The implementation of this research refers to the principle of two tests (pretest and posttest) which is the core of the One-Group Pretest-Posttest Design. In detail, the research procedure consists of three main stages, namely (1) the pretest stage, (2) the treatment stage, and (3) the posttest stage..

1. Pretest Stage

Before receiving any treatment, all samples (both in small-scale and large-scale trials) underwent a pretest (O_1) to determine basic dribbling and passing skills.

Table 2. Pretest was conducted using the following systematic procedure

Steps	Duration	Activity
Warm-up	10 minutes	Dynamic stretching, jogging, and light agility drills to prepare physically before the test.
Passing Test	10 minutes	Administering the Passing-Stopping test (Bambang & Samsudar, 2008). Each participant is given two attempts, and the best score will be recorded.
Break	5 minutes	Rest periods are provided to restore physical condition before continuing with the next test.
Dribbling Test	10 minutes	Administering the Dribbling test (Dewi & Pakpahan, 2018). Each participant is given two attempts, and the fastest time is used as the final score.
Documentation	5 menit	Recording of all pretest results in a prepared data format as baseline data (O_1).

The total pretest time ranges from 40–50 minutes per participant. The data collected at this stage is the pretest data, which will serve as the primary comparison with the posttest data.

2. Treatment

After the pretest was completed, the experimental group was given a speed training program specific to futsal. Speed training in the futsal context includes sprints, change of direction (COD), agility drills, and speed drills combined with ball control. Research by [Herlambang et al \(2022\)](#) showed that speed, balance, and agility training significantly influenced the dribbling ability of futsal players, with a t-test result of 0.000.

The speed training program implemented in this study refers to a futsal speed training model that has been developed and validated for extracurricular activities at State Senior High School 6 Bandar Lampung, with expert validation results reaching 97.41% (categorized as "very feasible").

Table 3. Weekly Exercise Program Design

Sunday	Training Focus	Examples of Exercises	Intensity
1–2	Adaptation and Introduction	10–20 meter linear sprints, fast passing in pairs, slow-speed dribbling, and basic coordination drills.	Low–Medium
3–6	Intensification and Reinforcement	Shuttle runs with the ball, zigzag cone drills at maximum speed, high-intensity small-sided games (2v2 or 3v3), and change-of-direction drills.	Medium–High
7–8	Maintenance and Application	High-intensity pressure small-sided games, match simulations with an emphasis on transition speed, and combination passing and dribbling drills at speed.	High

Implementation per training session (60–90 minutes):

1. Warm-up (10–15 minutes): Dynamic stretching, jogging, and light agility drills.
2. Core training (40–60 minutes): Implementation of a speed training program according

to the weekly focus.

3. Cool-down (5–10 minutes): Static stretching and a brief evaluation of the training session.

Table 4. The Difference Between Small-Scale and Large-Scale Trials

Aspect	Small-Scale Pilot (10 people)	Large-Scale Trial (20 participants)
Duration	4 weeks (12 meetings)	8 weeks (24 sessions)
Objective	Test program implementation, identify challenges, and refine the training design.	Primary implementation of the speed training program to assess overall effectiveness.
Monitoring	Intensive observation of each session, recording of technical challenges, and brief interviews with participants.	Routine observation, attendance recording, and periodic evaluations every 2 weeks.

The entire training process is documented in the form of attendance records and observations of program implementation to ensure that the intervention is carried out in accordance with established protocols..

3. Posttest Stage

After the treatment period was completed, the subjects underwent another test identical to the pretest (O₂). The posttest was administered 2 days after the final training session to ensure that fatigue from the training did not affect the test results.

Table 5. The posttest procedure followed the same sequence as the pretest

Activity	Steps
1	Warm-up (10 minutes)
2	Passing-Stopping Test
3	Rest (5 minutes)
4	Dribbling Test
5	Data Documentation

The data collected at this stage is posttest data. Comparing the pretest and posttest results is the core of the analysis to determine the effect of speed training on improving dribbling and passing skills.

Statistical analysis

The data collected from the pretest and posttest results will be analyzed using an inferential statistical approach through statistical software (such as SPSS or other statistical programs).

Results

In this chapter, I present the results of the research and analysis of a futsal speed training model, including dribbling and passing training models implemented at State Senior High School 6 Bandar Lampung. The data collection process began with initial observations, interviews with coaches, and small and large group trials. Each stage was carefully conducted to ensure that the developed training model was truly relevant, applicable, and capable of contributing to improving students' speed abilities in futsal.

Table 6. Small-Scale Trial Test Results Data

No.	Name	Initial Attitude				Imp.			Final			Score	Value	Criteria
1	A1	3	3	3	4	3	4	3	4	3	3	33	66,0	Good
2	A2	3	3	3	3	4	3	3	4	3	3	32	64,0	Good
3	A3	2	1	1	2	2	2	2	2	2	2	18	36,0	Not enough
4	A4	4	4	3	3	3	3	2	2	3	3	31	62,0	Good
5	A5	5	4	4	4	4	4	3	3	4	5	41	82,0	Very good
6	A6	3	3	3	3	3	4	4	2	3	4	32	64,0	Good
7	A7	4	3	3	3	3	2	2	3	4	4	31	62,0	Good
8	A8	4	3	3	3	3	4	3	3	4	4	34	68,0	Good
9	A9	5	5	4	4	4	4	4	3	4	5	42	84,0	Very good
10	A10	4	3	4	3	3	4	3	3	3	4	34	68,0	Good

Based on the results of a small-scale trial test involving 10 participants, it was found that 2 students achieved excellent criteria, 7 students were in good criteria, and 1 student was included in the poor criteria. Of the total participants, the average score was 65.60, with the highest score reaching 42 and the lowest score being 18. These findings indicate that most students have demonstrated good performance on the developed training model.

Table 7. Large-Scale Trial Test Results Data

No.	Name	Initial Attitude				Imp.			Final			Score	Value	Criteria
1	A1	4	3	3	3	3	3	3	3	4		32	64,0	Good
2	A2	4	4	4	4	3	2	3	4	3		34	68,0	Good
3	A3	4	3	4	3	4	3	3	3		4	34	68,0	Good
4	A4	4	4	3	3	3	3	3	2		3	31	62,0	Good
5	A5	5	4	4	4	4	4	4	3	4	5	41	82,0	Very good
6	A6	5	5	4	4	4	4	4	3	4	5	42	84,0	Very good
7	A7	4	3	3	3	3	2	2	3	4	4	31	62,0	Good
8	A8	4	3	3	3	3	4	3	3	4	4	34	68,0	Good
9	A9	4	3	3	3	3	3	3	3	5	4	32	64,0	Good
10	A10	2	2	2	2	2	2	2	2	2	2	20	40,0	Not enough
11	A11	3	3	3	4	3	3	3	3	3	4	32	64,0	Good
12	A12	3	3	3	3	4	4	3	4	3	3	33	66,0	Good
13	A13	5	5	5	4	4	4	4	4	4	5	44	88,0	Very good
14	A14	4	4	3	3	4	3	3	4	3	3	34	68,0	Good
15	A15	2	1	1	2	2	2	2		2	2	18	36,0	Not enough
16	A16	3	3	3	3	4	3	3	4	3	3	32	64,0	Good
17	A17	5	5	4	4	4	4	4	5	5	4	44	88,0	Very good
18	A18	4	4	4	3	3	3	3	3	3	4	34	68,0	Good
19	A19	5	5	5	4	4	4	4	4	5	5	45	90,0	Very good
20	A20	3	3	3	3	3	4	4	2	3	4	32	64,0	Good

Based on the results of a large-scale trial test involving 20 participants, it was found that 5 students achieved excellent criteria, 13 students were in the good criteria, and 2 students were included in the poor criteria. Overall, participants obtained an average score of 67, with the

highest score being 45 and the lowest score being 18. These results indicate that most students were able to follow the developed training model well.

Small-Scale Non-Test Trial Results

Table 8 below presents data from the results of small group trials on the design of the dribbling and passing training model analysis for students participating in extracurricular futsal activities at State Senior High School 6 Bandar Lampung, Bandar Lampung City.

Table 8. Small-Scale Non-Test Trial Results

No	Indicators	Minimum Score	Maximum Score	Result Score	Percentage
1	Ease	40	160	138	86,25%
2	Attractiveness	40	160	133	83%
3	Usefulness	40	160	139	86,87%
4	Security	40	160	129	80,62%
Total				539	83%

Based on the results of a small group trial questionnaire distributed to 10 respondents, the following data was obtained: for the ease sub-indicator, 2 respondents stated it was very easy and 8 respondents stated it was easy. For the attractiveness sub-indicator, 1 respondent stated it was very interesting and 9 respondents stated it was interesting. For the usefulness sub-indicator, 8 respondents rated it very useful, while 2 respondents stated it was useful. Meanwhile, for the safety sub-indicator, 3 respondents stated it was very safe and 7 respondents stated it was safe. These findings indicate that the majority of respondents responded positively to the developed training model.

For the second training model, the results of a questionnaire distributed to 10 respondents showed that for the ease sub-indicator, 9 respondents stated it was very easy and 1 respondent stated it was easy. For the attractiveness sub-indicator, 8 respondents stated it was very interesting and 2 respondents stated it was interesting. For the usefulness sub-indicator, 8 respondents stated it was very useful, while 2 respondents stated it was useful. Meanwhile, for the safety sub-indicator, 9 respondents stated it was very safe and 1 respondent stated it was safe. These results indicate that the majority of participants responded very positively to the second training model developed.

In the third training model, questionnaires distributed to 10 respondents showed that for the ease sub-indicator, 8 respondents rated it very easy, while 2 respondents stated it was easy. For the attractiveness sub-indicator, 3 respondents rated it very interesting and 7 respondents stated it was interesting. For the usefulness sub-indicator, 1 respondent stated it was very useful and 9 respondents stated it was useful. For the safety sub-indicator, all 10 respondents gave a safe rating.

Meanwhile, in the fourth training model, results showed that for the ease sub-indicator, 3 respondents stated it was very easy and 7 respondents stated it was easy. For the attractiveness sub-indicator, 4 respondents stated it was very interesting and 6 respondents stated it was interesting. For the usefulness sub-indicator, 4 respondents stated it was very useful and 6 respondents stated it was useful. For the safety sub-indicator, all 10 respondents gave a safe rating.

Large-Scale Non-Test Trial Results

Table 9 below presents data from the results of large group trials on the design of the dribbling and passing training model analysis in futsal extracurricular activities at State Senior High School 6 Bandar Lampung, Bandar Lampung City.

Table 9. Large-Scale Non-Test Trial Result Data

No	Indicators	Minimum Score	Maximum Score	Result Score	Percentage
1	Ease	80	320	419	87%
2	Attractiveness	80	320	393	81%
3	Usefulness	80	320	401	83%
4	Security	80	320	381	79%
Total				1.594	82%

Based on the results of a large-group trial involving 20 respondents, the following data was obtained for the first training model: For the ease sub-indicator, 10 people rated it very easy, and 10 others said it was easy. For the attractiveness sub-indicator, 2 respondents rated it very interesting, and 18 respondents said it was interesting. For the usefulness sub-indicator, 9 people responded very useful, and 11 respondents responded useful. Meanwhile, for the safety sub-indicator, only 1 person stated it was very safe, and the majority, 19 respondents, rated it safe. These findings indicate that the first training model received a positive response from the majority of participants.

For the second training model, the results of the trial conducted with 20 respondents showed that for the ease sub-indicator, 17 people responded very easy, while 3 others responded easy. For the attractiveness sub-indicator, 4 respondents stated it was very interesting, 15 respondents stated it was interesting, and 1 respondent stated it was not interesting. For the usefulness sub-indicator, 9 respondents responded very useful, and 11 respondents responded useful. Meanwhile, for the security sub-indicator, 5 respondents stated it was very safe and 15 respondents stated it was safe. Overall, the second training model received a very positive response from the majority of participants, particularly regarding the ease and usefulness aspects. For the third training model, the results of a trial with 20 respondents showed that for the ease sub-indicator, 10 respondents responded very easy and 10 others said it was easy. For the attractiveness sub-indicator, 6 respondents rated it very interesting and 14 respondents stated it was interesting. For the usefulness sub-indicator, 7 respondents rated it very useful, while 13 respondents stated it was useful. Meanwhile, for the security sub-indicator, all 20 respondents stated it was safe. These results indicate that the third training model was positively evaluated, particularly regarding the safety and attractiveness aspects.

For the fourth training model, the results of a trial with 20 respondents showed that for the ease sub-indicator, 8 respondents rated it very easy and 12 respondents said it was easy. For the attractiveness sub-indicator, 4 respondents rated it very interesting and 16 respondents stated it was interesting. For the usefulness sub-indicator, 7 respondents responded that it was very useful and 13 respondents responded that it was useful. Meanwhile, for the safety sub-indicator, 5 respondents stated that it was very safe and 15 respondents responded that it was safe. Shows that the average percentage of results from the large group trial involving 20 participants was 82%. Therefore, it can be concluded that the developed training model product is valid and suitable for use in futsal extracurricular activities.

Discussion

The expert validation results showed a percentage of 97.41%, indicating that the developed speed training model falls into the "very feasible" category. This very high validation rate reflects that the developed training model has undergone a thorough review process and considered various important aspects, such as suitability to the student's developmental level, safety of implementation, and the method's effectiveness in achieving the goal of increasing speed. This validation aligns with other futsal training model development studies, such as the development of a shooting training model for players aged 14-16 in Nagari Salimpek, which

also achieved a 95% feasible validation result. This indicates that the expert validation-based model development approach is a reliable method for designing futsal training programs.

Furthermore, model trials in both small and large groups demonstrated positive responses from students, with feasibility ratings ranging from "good" to "very good." This positive response is crucial because active student engagement and motivation are key factors in the success of a training program. When students perceive the training as interesting, appropriate, and not boring, they tend to be more enthusiastic about participating in each training session. This, in turn, will have an impact on optimizing physical abilities and futsal playing techniques.

The results of the speed test in this study showed an increase in students' speed abilities after being treated using the developed training model. This finding aligns with various previous studies confirming that speed training positively contributes to basic futsal skills (Jaber, 2025).

Research by Pahlevi (2024) conducted on futsal extracurricular participants at SMA Muhammadiyah 1 Wonosobo showed that tactical approach training significantly impacted passing ability. The results showed that the pretest average passing score of 14.20 increased to 15.73 on the posttest, with a mean difference of 1.53. This figure indicates that structured training can produce significant improvements in students' passing ability.

Another study by Syaifulloh et al. (2026) on futsal extracurricular participants at SMA Muhammadiyah 1 Karanganyar also confirmed this finding, where the pretest average passing score of 6.35 increased to 7.7 on the posttest, a 21.25% increase. Although the mean values used differed across studies due to differences in measurement instruments, the training intervention consistently demonstrated improvements in passing ability. The paired passing practice method has also proven effective, with research on students at Pulo Brayan Medan Private Aviation High School showing an increase in the average pretest score from 67% to 89% on the posttest, with an average increase of 22%.

For dribbling ability, Pahlevi (2024) research showed a pretest average of 19.29 seconds, compared to 17.59 seconds in the posttest, with a mean difference of 1.69. A shorter dribbling time indicates improved dribbling ability, so the decrease in scores from pretest to posttest reflects improved skills.

Mufafa Futsal Academy U14-16 team using the Speed, Agility, Quickness (SAQ) training method also demonstrated a significant effect on dribbling skill (Sun, Soh, Ma, et al., 2025). The results showed a pretest average of 25.0 and a posttest average of 23.3, with an average increase of 1.67. The calculated t-value (36.2) was significantly greater than the t-table (2.20), indicating a highly significant effect. Research on futsal extracurricular activities at SMP Negeri 3 Talang, Tegal Regency by a research team from Semarang State University also provided strong evidence, where speed and agility training was able to provide better changes in dribbling ability by 38.95% compared to before the training was given.

Several studies have shown that in the context of futsal, agility often contributes more significantly than speed alone to dribbling ability. Research on extracurricular students at SMP Negeri 13 Seluma showed that agility is a more dominant physical component than speed in supporting students' futsal dribbling ability. A similar finding was found in a study of the extracurricular futsal team at SMP PGRI Pekanbaru, where agility significantly contributed to dribbling ability, with a correlation coefficient (r-count) of $0.73 > r\text{-table}$.

These findings have important implications: Developed speed training programs should not only focus on linear speed but also integrate change of direction and agility. In the dynamic nature of futsal, with limited space, the ability to change direction quickly and maintain control of the ball is a determining factor in a player's success (Villanueva-Guerrero et al., 2026). As emphasized in the principles of futsal training, the intensity of agility in futsal contributes more than speed alone (Aboulfaraj et al., 2025). Therefore, futsal extracurricular activities can include short-distance sprinting programs accompanied by zigzag running to accustom muscles

to sudden contractions and responsiveness to changing conditions on the field. This study employed a two-stage trial approach: a small-scale trial (10 participants) and a large-scale trial (20 participants).

In the small-scale trial, the speed training model was tested on a smaller group to identify potential technical challenges, design weaknesses, and aspects that needed improvement before the model was tested on a larger scale. The same approach was applied to the development of the futsal shooting training model in Nagari Salimpek, where the small-scale trial involved 10 players from the MTRB Team and the large-scale trial involved 20 players from the PSJS Team. The results of the trials in both groups demonstrated high consistency in feasibility, with an expert validation score reaching 95%.

In the context of developing a basic futsal skills test instrument, [Pribadi et al. \(2025\)](#) also conducted a phased trial in line with this approach. In a small-scale trial involving 15 players, the dribbling test instrument demonstrated a validity value of 0.968 with a reliability of 0.979, while the passing test demonstrated a validity value of 0.910 with a reliability of 0.947. In a large-scale trial involving 90 players from six districts, the dribbling test instrument demonstrated a validity value of 0.995 with a reliability of 0.990, and the passing test demonstrated a validity value of 0.954 with a reliability of 0.977. These results indicate that the measurement instruments remain consistent and reliable when used on a larger scale. More importantly, there was no difference in norms between the small and large groups, so the measurement instrument can be considered objective and generalizable to players aged 18-23.

The consistency of results between the small and large-scale trials in this study is an important indicator that the developed speed training model has a good level of generalization. This means that the model is not only effective for small groups that may receive more intensive attention, but also effective when applied to larger groups with more diverse dynamics and individual variations ([Luo et al., 2023](#)). Therefore, this model deserves to be recommended and implemented more widely, both at State Senior High School 6 Bandar Lampung and at other schools with similar futsal extracurricular programs.

The validity and reliability of the research instruments are crucial aspects that determine the quality of research results. This study used the Passing-Stopping test instrument developed, which had a validity value of 0.783 and a reliability value of 0.824, and the Dribbling Test in Futsal, which had a validity value of 2.365 and a reliability value of 0.891. These figures indicate that both instruments are valid and reliable, making them suitable for use in research to measure passing and dribbling abilities. These high validity and reliability values are reinforced by research by [Pribadi et al \(2025\)](#) developed a basic futsal skills test instrument for players aged 18-23 years. The instrument was designed as a systematic procedure for observing student or athlete behavior, describing it through categorization, and also serving as a benchmark for training success..

The use of instruments with proven validity and reliability provides confidence that the data obtained in this study truly reflect the true abilities of the research subjects, and are not caused by other factors such as inaccuracy of the measuring instrument or systematic measurement error. This further strengthens the internal and external validity of the conclusions. The findings of this study have several important practical implications for the development of extracurricular futsal activities at the high school level ([Gemael & Sari, 2025](#)). The final product of this study can serve as a reference for coaches, Physical Education teachers, and extracurricular instructors in designing more structured speed training programs tailored to the needs of students ([Syaukani et al., 2023](#)).

First, extracurricular instructors at State Senior High School 6 Bandar Lampung and other schools can adopt this developed speed training model as an integral part of their regular training program. This model not only focuses on increasing speed but also integrates aspects of agility and ball control, making it more relevant to the demands of the real futsal game.

Second, it is important for coaches and instructors to conduct regular evaluations using standardized test instruments. This evaluation data is not only useful for assessing the effectiveness of the training program but can also serve as motivation for students to continue improving their skills.

Third, training programs need to consider the principles of periodization and progression of training loads, considering that physical and skill adaptations require sufficient time. Studies with intervention durations of 4-8 weeks have shown positive results, but more optimal improvements may be achieved with longer, more continuous training programs (Plotkin et al., 2022). Fourth, a varied and enjoyable training approach needs to be continuously developed to maintain student motivation, especially in the adolescent age group, which tends to easily become bored with monotonous routines. A combination of speed and agility training, small-sided games, and competitive elements can be an effective strategy to maintain active student engagement throughout the training program (Clemente et al., 2025).

While this research makes a significant contribution to the development of futsal speed training models, several limitations should be acknowledged. First, this study did not use a control group, making it difficult to determine whether the improvements were solely due to the speed training intervention and not to other factors such as maturation (natural development over time) or participation in other physical activities outside the training program. Second, the relatively short intervention duration (8 weeks for the large-scale trial) may not have been sufficient to assess the long-term impact of the training program on dribbling and passing abilities. Third, the study sample was drawn from only one school (State Senior High School 6 Bandar Lampung), so generalizing the results to a wider population requires caution. Further research with an experimental design involving a control group, a longer intervention duration, and a broader and more diverse sample size is needed to strengthen the evidence on the effectiveness of the speed training model on improving dribbling and passing abilities in futsal.

Conclusion

The futsal speed training model developed for extracurricular activities at State Senior High School 6 Bandar Lampung was declared very feasible to implement, ranging from "good" to "very good." The results of the speed test showed an increase in students' speed abilities after being treated using the developed training model. This finding reinforces the results of previous research that the speed training program resulted in positive changes in the speed of futsal extracurricular participants. Based on a literature review, structured tactical training approaches have been shown to have an impact on passing and dribbling skills, with better changes and lower dribbling times reflecting better abilities. Small-scale trials (10 people) and large-scale trials (20 people) conducted at State Senior High School 6 Bandar Lampung showed consistent positive results. This proves that the developed speed training model has a good level of generalization and can be adapted to larger groups. The final product of this study can be used as a reference for coaches, Physical Education teachers, and extracurricular instructors in designing more structured speed training programs.

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Conflict of interest

This research was conducted without any conflicts of interest and is therefore ready for publication.

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