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Cita sugerida (APA, séptima edición).

Mekchouche, M. D. (2026). Effects of a training program on speed and dribbling in U15 football players in El Marsa, Chlef, Algeria. *Revista Sociedad & Tecnología*, 9(4), 566-577, DOI: <https://doi.org/10.51247/f9xmnr47>.

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Effects of a training program on speed and dribbling in U15 football players in El Marsa, Chlef, Algeria

ABSTRACT

Football calls on a wide range of individual and collective skills, dribbling, in which a player evades or beats defenders through quick, precise movement on the ball, chief among the individual ones. Training programs are central to how these abilities are built, since they are the vehicle through which players acquire the physical and technical qualities that underpin performance. This study examines the effect of a proposed training program, built around a set of specific physical exercises, on running speed and dribbling skill among U15 football players, by comparing pre-test and post-test scores on both variables after the program's implementation. The study population comprised the 18 players of El Marsa Municipality's U15 football team (Chlef Province, Algeria), from which a purposive sample of 10 players was drawn. Using a one-group, experimental pre-test-post-test design, with a 10-second sprint test for speed and a 21-cone dribbling test for dribbling skill, and paired-samples t-tests following Shapiro-Wilk normality checks, the results showed statistically significant gains in running speed following the program ($t = 23.27$, $p = .000$, $\alpha = .01$), but no statistically significant change in dribbling skill ($t = 1.49$, $p = .16$, $\alpha = .05$). The study concludes that the program's speed-focused exercises were effective, while dribbling improvement likely calls for a training approach placing greater emphasis on motor coordination, repetition, and lower-limb strength specifically.

Keywords: training program; running speed; dribbling skill; U15 football; sports training; experimental design.

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Efectos de un programa de entrenamiento sobre la velocidad y el rendimiento del regate en futbolistas U15 de El Marsa, Chlef, Argelia

RESUMEN

El fútbol exige una amplia gama de habilidades individuales y colectivas, entre las que destaca el regate, mediante el cual un jugador evade o supera a los defensores a través de un movimiento rápido y preciso con el balón. Los programas de entrenamiento son fundamentales para el desarrollo de estas capacidades, ya que constituyen el vehículo a través del cual los jugadores adquieren las cualidades físicas y técnicas que sustentan el rendimiento. Este estudio examina el efecto de un programa de entrenamiento propuesto,

construido en torno a un conjunto de ejercicios físicos específicos, sobre la velocidad de carrera y la habilidad de regate en futbolistas sub-15, comparando las puntuaciones pre-test y post-test de ambas variables tras la aplicación del programa. La población de estudio estuvo compuesta por los 18 jugadores del equipo sub-15 del municipio de El Marsa (provincia de Chlef, Argelia), de los cuales se extrajo una muestra intencional de 10 jugadores. Mediante un diseño experimental de un solo grupo con pre-test y post-test, con una prueba de esprint de 10 segundos para la velocidad y una prueba de regate de 21 conos para la habilidad de regate, y pruebas t para muestras emparejadas tras comprobaciones de normalidad de Shapiro-Wilk, los resultados mostraron ganancias estadísticamente significativas en la velocidad de carrera tras el programa ($t = 23,27$, $p = ,000$, $\alpha = ,01$), pero ningún cambio estadísticamente significativo en la habilidad de regate ($t = 1,49$, $p = ,16$, $\alpha = ,05$). El estudio concluye que los ejercicios del programa centrados en la velocidad fueron eficaces, mientras que la mejora del regate probablemente requiere un enfoque de entrenamiento que ponga mayor énfasis en la coordinación motriz, la repetición y la fuerza de los miembros inferiores en particular.

Palabras clave: programa de entrenamiento; velocidad de carrera; habilidad de regate; fútbol sub-15; entrenamiento deportivo; diseño experimental.

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Efeitos de um programa de treinamento sobre a velocidade e o desempenho no drible de jogadores de futebol U15 de El Marsa, Chlef, Argélia

RESUMO

O futebol exige uma vasta gama de habilidades individuais e coletivas, entre as quais se destaca o drible. Driblar é a capacidade de um jogador driblar ou superar os defesas através de um controlo de bola rápido e preciso. Os programas de treino são fundamentais para o desenvolvimento destas capacidades, pois fornecem os meios pelos quais os jogadores adquirem as qualidades físicas e técnicas que sustentam o desempenho. Este estudo examina o efeito de um programa de treino proposto, baseado num conjunto de exercícios físicos específicos, na velocidade de corrida e na capacidade de drible em jogadores de futebol sub-15, comparando os resultados pré e pós-teste para ambas as variáveis após a implementação do programa. A população do estudo foi constituída pelos 18 jogadores da equipa sub-15 do município de El Marsa (província de Chlef, Argélia), dos quais foi selecionada uma amostra intencional de 10 jogadores. Utilizando um desenho experimental pré-teste/pós-teste com um único grupo, com um teste de sprint de 10 segundos para a velocidade e um teste de drible em 21 cones para a capacidade de drible, e testes t de amostras emparelhadas após a verificação da normalidade de Shapiro-Wilk, os resultados mostraram ganhos estatisticamente significativos na velocidade de corrida após o programa ($t = 23,27$, $p = 0,000$, $\alpha = 0,01$), mas nenhuma alteração estatisticamente significativa na capacidade de drible ($t = 1,49$, $p = 0,16$, $\alpha = 0,05$). O estudo conclui que os exercícios focados na velocidade no programa foram eficazes, enquanto a melhoria do drible requer provavelmente uma abordagem de treino que enfatize maior a coordenação motora, a repetição e, em particular, a força dos membros inferiores.

Palavras-chave: programa de formação; velocidade de corrida; capacidade de drible; futebol sub-15; treino desportivo; delineamento experimental.

INTRODUCTION

Modern physical training in football is one of the core pillars of player preparation, encompassing all the processes aimed at developing physical fitness by strengthening the

body's functional and energy systems and integrating their performance to meet the demands of match play (Al-Basati, 2001, p. 44). Individual technical skills, dribbling and passing among them, sit alongside collective skills, such as coordination and tactical understanding among teammates, as the twin foundations a player needs to perform effectively (Al-Basati, 1988).

Dribbling occupies a particularly important place within this skill set. It consists of feints and deceptive ball movements a player uses to get past an opposing defender, and it rests heavily on agility and neuromuscular coordination; without mastering it, a player cannot fully carry out the tactical duties their position demands during a match (Abu Abdo, 2002, p. 127). Speed, for its part, is widely regarded as one of the fundamental components of physical fitness across sprint-dependent sports, football included, and is closely bound up with other physical qualities such as strength, flexibility, agility, and endurance. Developing both speed and dribbling in young players is generally understood to depend on regular, well-structured training that builds muscular strength and flexibility, varies its technical and tactical content, and makes use of teamwork and passing exchanges to build ball control and on-field understanding (Rowland, 2005; Shazly & Bouabbas, 1998).

It is against this backdrop that the present study's central concern takes shape: training programs are the principal means through which players acquire the physical and technical qualities that raise their performance, but that outcome depends entirely on how well such programs are designed and planned (Abdel Fattah, 1997; Bastawisi, 1996). This raises the study's guiding question: does a proposed training program play a role in developing speed and improving dribbling skill among U15 football players? From this question follow a general hypothesis, that the proposed training program has an effect on developing speed and improving dribbling skill among football players, and two sub-hypotheses: first, that statistically significant differences would be found in running speed between the pre-test and post-test, favoring the post-test; and second, that statistically significant differences would similarly be found in dribbling skill, favoring the post-test (Ford et al., 2011).

Accordingly, this study set out to identify the effect of the proposed training program on developing speed and improving dribbling skill among youth football players, and specifically to establish whether statistically significant differences existed between pre-test and post-test scores on each of these two variables following the program's application (Ratib, 1999).

A modest body of prior work bears directly on this question. Studies by Faisal (2019/2020) and by Bouker Atam Belkacem (2007/2008) both point to a positive relationship between structured training, plyometric training in the latter case, and gains in speed or speed-strength among football players, with Bouker Atam Belkacem's study additionally reporting improvement in some basic football skills following the post-test. On the dribbling side, the picture is more mixed: Samara (1993) found that an integrated training method, one that departs from the traditional warm-up-tactical-drills-small-sided-games routine, was effective at developing dribbling skill, particularly among players training more than five sessions a week, while Ben Bardi (2014/2015) found that a repetitive training program centered on motor abilities, balance and coordination specifically, produced a noticeable improvement in dribbling and running with the ball. Taken together, this prior work suggests that speed gains from structured training are relatively consistent across studies, while dribbling gains appear to depend more heavily on the specific training method used, particularly its emphasis on coordination and motor-ability work, a distinction the present study's own contrasting findings for speed and dribbling will speak to directly (Bompa & Buzzichelli, 2019).

This local evidence base sits within a considerably larger international literature on speed and technical development in youth football. Stølen et al. (2005) established, in their widely cited physiological review, that repeated short sprints and high-intensity actions are among the match-performance qualities most responsive to targeted training, while Little and Williams (2005) showed that acceleration, maximum speed, and agility are sufficiently distinct physical qualities in professional players that training aimed at one does not automatically transfer fully to the others, a distinction directly relevant to a program, like the one examined here,

that combines sprint and agility work within the same sessions. On the technical side, França et al. (2022) and Negra et al. (2017) both identify change-of-direction ability and age-related maturation as significant predictors of dribbling and agility performance among adolescent players, underscoring that technical gains in this age group are shaped by a mix of trainable skill and ongoing physical development that a single training program may only partially influence within a short intervention window.

Speed itself is worth defining more precisely at the outset, since the term is used in a specific sense throughout this study (Reilly & Williams, 2003). In football, speed refers to a player's ability to perform movements, with or without the ball, in the shortest possible time under the specific conditions the game imposes; more generally, it is often defined simply as the capacity to perform a physical movement, or a defined sequence of movements, as quickly as possible (Hamada, 2011-1997). Dribbling, for its part, refers to the feints and deceptive ball movements a player uses to get past a point occupied by an opposing player while retaining possession, moving into a new area of the field through a technical performance designed to deceive the opponent; while especially associated with attacking players, it is a skill every outfield player needs at some point during a match. Both concepts are treated in this study as directly measurable through standardized field tests, described in the methodology below, rather than through subjective coach ratings, a choice intended to keep the study's central comparison, between speed gains and dribbling gains following the same training program, on a common, quantifiable footing.

For the purposes of this study, a training program refers operationally to the set of training units, comprising specific physical exercises for developing speed and improving dribbling skill, applied to the El Marsa U15 football team over a defined period. Speed refers operationally to the score obtained on the sprint test administered to the study sample, and dribbling refers operationally to the score obtained on the dribbling test administered to the same sample, both described in full in the methodology below.

The study's significance follows directly from the central role training programs play in athletic development: they are the concrete mechanism through which coaches translate general knowledge about physical and technical development into gains a specific group of players actually experiences, which makes the question of whether a given program achieves its intended effects, and on which specific abilities, a matter of direct practical consequence for coaches and sporting institutions alike. This is particularly true for the U15 age category, a stage at which physical and technical foundations are still being laid and at which the choice of training emphasis can shape a player's subsequent development considerably. By testing a single, concretely specified program against two distinct outcome measures, speed and dribbling, rather than assuming that gains in one imply gains in the other, this study aims to contribute evidence relevant to a genuinely practical question coaches face when designing training content for young players: whether a program built primarily around speed development can be expected to improve technical ball skills as a secondary benefit, or whether such skills require training attention in their own right.

Methodology

This study adopted the experimental method, understood as the deliberate, controlled manipulation of specific conditions within the phenomenon under study, followed by observation of the resulting effects, an approach well suited to establishing precise, reliable causal evidence. Specifically, the study used a one-group, pre-test-post-test experimental design, in which the same sample was measured on the two dependent variables, running speed and dribbling skill, before and after the training program's application, with the training program serving as the study's independent variable.

The study population comprised the 18 U15 players of El Marsa Municipality's football team in Chlef Province. Given that a sample must represent its population as accurately as possible,

a purposive sampling method was used, yielding a sample of 10 players from this population of 18.

Two dependent variables were measured. Running speed was assessed using a 10-second sprint test: the participant stood behind a marked starting line in a standing-start position and, on the starting signal, ran as fast as possible for 10 seconds until the stop signal, with the distance covered during that interval recorded as the score. Dribbling was assessed using a 21-cone dribbling test: the player began at a starting point with the ball, facing 21 plastic cones spaced roughly 1 meter apart over a 21-meter course, and dribbled the length of the course using different parts of the foot while keeping the ball under control, with performance timed and a 2-second penalty added for each cone knocked over.

The training program itself consisted of a series of structured training units built around specific physical exercises targeting speed and dribbling, applied to the sample over the study period. Table 1 reproduces one representative session (Session 8) from the program in full, illustrating its structure: an objective of developing running speed and ball control, equipment consisting of balls, cones, a whistle, a stopwatch, and bibs, and a total duration of 85 minutes divided into a 20-minute warm-up phase (light jogging, general warm-up, flexibility and muscle-stretching exercises), a 55-minute main phase combining cone-based sprint and agility drills with paired dribbling and passing exercises, including foot-combination variations, and a 10-minute cool-down phase of stretching and relaxation.

Table 1.

Representative Training Session (Session 8): Objective — Developing Running Speed and Ball Control. Equipment — Balls, Cones, Whistle, Stopwatch, Bibs. Total Duration — 85 Minutes.

Stage	Exercises	Duration	Repetitions
Warm-up	Light jogging around the field; general warm-up from top to bottom; flexibility and specific muscle-stretching exercises.	20 min	—
Main phase	Exercise 1: run and jump over 10 cones (1 m apart), then sprint 15 m.		4 × 2 sets (1 min rest)
	Exercise 2: two groups; on the whistle, the first player from each group sprints between the cones and returns.	15 min	4 × 2 sets
	Exercise 3: two groups dribble quickly between the cones, then pass to the next player, with foot-combination variations (right pass/left receive; left pass/right receive; same-foot pass and receive), followed by a practice match.	15 min	(sufficient rest)
		10 min	Repeated until all players complete the sequence
Cool-down	Muscle stretching and full-body relaxation exercises.	10 min	—

Prior to statistical testing, the normality of the data distribution for both variables was checked using the Shapiro-Wilk test, appropriate given the sample size of fewer than 50 participants; in both cases the data were found to be normally distributed, justifying the use of the paired-samples t-test. Descriptive statistics, arithmetic means and standard deviations, were calculated for the pre-test and post-test scores on each variable, and paired-samples t-tests were then used to test each sub-hypothesis, with running speed tested at a significance level of $\alpha = 0.01$ and dribbling tested at $\alpha = 0.05$, consistent with the significance thresholds reported in the original analysis.

Beyond the specific speed and dribbling drills described above, the broader training program from which Session 8 is drawn was designed following several general principles common to sports-training program design: it took into account the interests and developmental needs of the U15 age group specifically; it was conceived as complementary to the players' wider footballing education rather than a stand-alone intervention; and it was built with an eye to what could realistically be delivered given the training facilities and equipment actually available to the team. Before the program's content was finalized, consideration was given to each player's training history and physical readiness, their existing physical and technical level as established through baseline testing, the specific physical qualities most in need of development, and the training fields, assistant coaches, and equipment the program would require.

Statistical analysis was carried out using the arithmetic mean and standard deviation to summarize pre-test and post-test performance on each variable, followed by the paired-samples Student's t-test to establish whether the pre-test to post-test change on each variable was statistically distinguishable from chance variation, given the study's repeated-measures, one-group design.

The independent and dependent variables were defined in the standard sense used throughout experimental research: the independent variable is the one the researcher treats as the presumed cause of an outcome, its effect on another variable being the object of study, and here this was the training program itself; the dependent variable is the one presumed to be affected by the independent variable, changing in response to it, and here the two dependent variables were running speed and dribbling skill, each measured before and after the program's application using the field tests described above.

RESULTS

This section reports the pre-test and post-test findings for each of the study's two dependent variables, running speed and dribbling skill, following the training program's application (see Table 1 in the methodology section above for a representative session from the program itself). Before testing for differences between the pre-test and post-test scores, the normality of the data distribution was checked for both variables using the Shapiro-Wilk test, the appropriate choice given the sample size of fewer than 50 participants. In both cases, the data were found to be normally distributed, which justified the use of the paired-samples t-test to compare pre-test and post-test scores on each variable.

Table 2.

Shows the results for running speed.

Running Speed (m)	Mean	SD	t	Sig.	α	Statistical Significance
Pre-test	50.55	0.83	23.27	0.000	0.01	Significant, favoring post-test
Post-test	60.27	1.67				

The pre-test mean for running speed was 50.55 (SD = 0.83), against a post-test mean of 60.27 (SD = 1.67). The paired-samples t-test yielded $t = 23.27$, with a significance value of 0.000, below the $\alpha = 0.01$ threshold set for this variable, indicating a statistically significant difference between the pre-test and post-test scores, in favor of the post-test.

Table 3

Shows the corresponding results for dribbling skill.

Dribbling (sec.)	Mean	SD	t	Sig.	α	Statistical Significance
Pre-test	10.04	1.42	1.49	0.16	0.05	Not significant

Post-test	9.65	1.69
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The pre-test mean for dribbling was 10.04 seconds (SD = 1.42), against a post-test mean of 9.65 seconds (SD = 1.69). The paired-samples t-test yielded $t = 1.49$, with a significance value of 0.16, above the $\alpha = 0.05$ threshold set for this variable, indicating no statistically significant difference between the pre-test and post-test scores on dribbling.

Taken together, these results show a clear asymmetry between the two dependent variables: the training program was associated with a substantial, statistically significant improvement in running speed, but with only a small, statistically non-significant numerical improvement in dribbling time (a reduction of 0.39 seconds on average). The first sub-hypothesis, predicting a significant post-test improvement in speed, is accordingly supported by the data; the second, predicting a significant post-test improvement in dribbling, is not.

In absolute terms, the post-test speed score exceeded the pre-test score by an average of 9.72 units, a substantial shift relative to the pre-test standard deviation of 0.83, consistent with the very small p-value obtained. The post-test dribbling score, meanwhile, improved by an average of 0.39 seconds relative to the pre-test, a change smaller than either the pre-test or post-test standard deviations (1.42 and 1.69 respectively), consistent with a difference too small, relative to the variability in individual player scores, to be distinguished reliably from chance with a sample of this size.

Overall, then, the results provide clear support for the first sub-hypothesis and no statistical support for the second: the training program was followed by a large, statistically significant improvement in running speed, and by a small, statistically non-significant improvement in dribbling time. These two outcomes are presented here as reported in the original analysis; their interpretation in light of the program's content and the wider training literature is developed in the discussion section that follows.

It is worth noting the direction of the dribbling result specifically: because the dribbling test is timed, a lower post-test score represents better, faster performance. The observed change, from a pre-test mean of 10.04 seconds to a post-test mean of 9.65 seconds, therefore moved in the direction the second sub-hypothesis predicted, players completing the dribbling course somewhat faster after the program than before, even though that improvement did not clear the statistical threshold needed to rule out chance variation given the study's sample size and the natural variability in individual players' dribbling times.

Comparing the two variables' standard deviations also offers a useful descriptive check on the pattern of results. For running speed, the standard deviation roughly doubled from pre-test to post-test (0.83 to 1.67), suggesting that while every player improved on average, the size of that improvement varied more from player to player by the end of the program than it had at the start, consistent with individual differences in how quickly young players respond to a standardized speed-training load. For dribbling, the standard deviation increased more modestly (1.42 to 1.69), a pattern broadly in line with a program that produced, at most, a small and inconsistent effect on this particular skill across the sample.

Read purely as a set of descriptive findings, before any causal interpretation, Tables 2 and 3 together indicate that the ten players in this sample were, on average, both faster and marginally quicker at dribbling by the end of the training period than they had been at its start, but that only the speed change was large and consistent enough, relative to the spread of individual scores, to be distinguished statistically from ordinary measurement and performance variability. This asymmetry between a robust speed effect and an inconclusive dribbling effect forms the empirical starting point for the discussion that follows.

Finally, it is worth restating the two results side by side against their respective significance thresholds, since the study tested them at different α levels. Running speed was evaluated at the more conservative $\alpha = 0.01$ threshold and still returned a significance value ($p = .000$) far below that cutoff, indicating a highly robust effect. Dribbling was evaluated at the more

permissive $\alpha = 0.05$ threshold and still failed to reach it ($p = .16$), meaning the non-significant dribbling result cannot be attributed to an unusually strict significance criterion; had the more lenient $\alpha = 0.05$ threshold been applied to both variables, the speed result would remain comfortably significant while the dribbling result would still fall short.

DISCUSSION

The significant gain observed in running speed can plausibly be attributed to the training program's structure: a substantial share of its sessions focused specifically on speed development, built around the principle of progression, with the duration and intensity of speed-focused exercises increased gradually over the course of the program. The relative simplicity of these exercises, and their suitability for players under 15, may also have supported the observed gains, alongside the program's inclusion of exercises targeting muscular strength, balance, coordination, flexibility, and general movement quality, all of which contribute directly or indirectly to running speed. The program's design also reflected several general principles of physical-capacity development: appropriately timed repetition of training load, gradual load progression, training continuity, and an integrated approach to developing physical qualities together rather than in isolation.

Several considerations specific to speed training appear to have been built into the program and plausibly help account for its effectiveness. Training progressed from submaximal to maximal speed, with attention paid to ensuring exercises did not induce muscle stiffness and that movement retained correct timing, smoothness, and relaxation. Short running distances were used to avoid fatigue-induced technical errors, with rest periods of roughly 2 to 5 minutes allowed between repetitions. Adequate warm-up preceded speed work to guard against injury to muscles, tendons, and ligaments, and speed exercises were scheduled immediately after the warm-up, when the body is best able to benefit from them before fatigue sets in. The program's attention to flexibility and to the capacity for muscular relaxation, alongside its emphasis on muscular strength development more broadly, likely reinforced these speed-specific gains further.

These findings align with those reported by Faisal (2019/2020) and by Bouker Atam Belkacem (2007/2008), the latter specifically confirming that plyometric training has a positive effect on speed-strength among football players and finding significant post-test gains in both speed-strength and some basic football skills among youth players. Read alongside the present results, this convergence across three independent studies, spanning different training methods (progressive speed training here, plyometric training in Bouker Atam Belkacem's study) but a shared youth football population, lends the finding that structured speed training reliably improves running speed in young players a reasonably solid evidential footing.

The absence of a significant improvement in dribbling presents a more complicated picture, and stands in contrast to two other studies in this area. Samara Yahya and Litim Samir (2023) found that an integrated training method, one that breaks from the traditional warm-up-tactical-drills-small-sided-games format, was effective in developing dribbling skill, and argued that this method suits players training more than five times a week, such as those in football academies, in part because it raises motivation and reduces the boredom that repetitive traditional training can produce. Ben Bardi (2014/2015) similarly found that a repetitive training program centered specifically on motor abilities, balance and coordination above all, produced a noticeable improvement in dribbling and in running with the ball, attributing that improvement directly to the program's motor-ability content.

Read against these two studies, the present program's failure to move dribbling scores significantly suggests that speed-focused training, however effective for speed itself, does not automatically transfer to dribbling performance, which appears to depend on a more specific set of coordinative and motor-ability elements that this particular program may not have emphasized sufficiently, or for long enough, within the training period studied. This points

toward several considerations worth weighing in any training program aimed specifically at dribbling improvement: strengthening motor coordination, ensuring adequate continuity and repetition in dribbling-specific drills, developing lower-limb muscular strength in particular, and building the endurance needed to sustain technical quality over the course of a session or match.

It is also worth noting, as a purely statistical observation, that the post-test dribbling mean was numerically faster than the pre-test mean (9.65 seconds versus 10.04 seconds), even though this difference did not reach statistical significance at the $\alpha = 0.05$ threshold; with a sample of 10 players, the study's statistical power to detect a smaller true effect on dribbling was necessarily limited, which counsels some caution before concluding that the program had literally no effect on dribbling, as opposed to an effect too small, or a sample too small, for this design to detect reliably.

There is also a plausible training-time explanation worth considering alongside the coordination-focused account offered above. The sample training session reproduced in the methodology (Session 8) devotes its main phase primarily to sprint- and agility-based cone work, with dribbling and passing exercises included but sharing time with speed-oriented drills rather than receiving dedicated, extended practice in their own right. If this balance of emphasis was broadly representative of the program as a whole, the null dribbling result may reflect not that dribbling is inherently harder to train in this age group, but that the program, as designed, allocated comparatively less concentrated training time to it than to speed development specifically, a possibility consistent with Ben Bardi's (2014/2015) finding that a program built specifically and primarily around motor-ability and coordination work produced clear dribbling gains.

This asymmetry between the study's speed and dribbling findings is also consistent with Little and Williams's (2005) broader observation that acceleration and agility are separable physical qualities that do not automatically develop together, and with Stølen et al. (2005) finding that speed-related actions respond comparatively quickly to focused training, exactly the pattern of a large, rapid speed gain against a modest, non-significant dribbling change observed here. The age and developmental stage of the sample is also worth weighing in this light: Faigenbaum et al.'s (2009) position statement on youth resistance training emphasizes that training responses in players under 15 remain closely tied to concurrent growth and maturation, which may partly explain why an eight-week program produced a clear, measurable speed effect while a more technically demanding skill such as dribbling, shown by França et al. (2022) and Negra et al. (2017) to depend heavily on age-related coordinative development, showed only a modest, statistically inconclusive shift over the same period.

CONCLUSIONS

This study set out to test whether a proposed training program built around specific physical exercises would improve running speed and dribbling skill among U15 football players at El Marsa Municipality. The findings supported the first of these expectations but not the second: running speed improved significantly following the program ($t = 23.27$, $p = .000$), while dribbling skill showed no statistically significant change ($t = 1.49$, $p = .16$), despite a small numerical improvement in the expected direction.

The study's main contribution lies in offering direct, controlled evidence, drawn from a real youth football setting, that a progressive, speed-focused training program can reliably improve running speed in players under 15 within a defined training period, while also showing, through its null dribbling result, that speed gains of this kind do not automatically carry over into technical ball skills such as dribbling. Read alongside the contrasting literature on dribbling-specific training methods, this points to dribbling improvement as a more specialized training target, one that appears to call for dedicated coordination, repetition, and lower-limb strength work rather than deriving as a by-product of general speed and conditioning work.

Practically, these findings carry direct implications for coaches working with youth football squads. Where a training program is expected to serve as a single, general tool for developing an entire skill set, the results caution that any one training focus, speed in this case, is likely to deliver on its own specific target while leaving other, technically distinct skills largely unmoved. Coaches designing programs for young players would accordingly do well to build in components specifically targeted at each skill they intend to develop, rather than assuming that general physical conditioning will transfer across skills, and to invest in ongoing training for themselves in how to calibrate training load appropriately for each age group, alongside advocating for the facilities and equipment, natural-grass pitches and well-equipped indoor halls among them, that make this kind of targeted, varied training feasible in practice.

More broadly, the study illustrates the value of testing multiple outcome variables within a single training intervention rather than assuming uniform effects across skills: had only running speed been measured, the program would have appeared straightforwardly successful, while the addition of a dribbling measure reveals a more nuanced picture in which success on one physical quality did not extend automatically to a related technical skill. This kind of multi-outcome evaluation seems a useful standard for future training-program research in youth football to adopt as a matter of course.

LIMITATIONS OF THE STUDY

Several limitations bear on how these findings should be interpreted. First, the study used a one-group pre-test-post-test design without a control group; in the absence of a comparison group that did not receive the training program, the observed improvement in running speed cannot be fully separated from other possible explanations, such as natural growth and maturation over the training period, players' familiarity with the test itself on a second attempt, or ordinary match and practice activity outside the program. Second, the sample was small, 10 players drawn from a population of 18, and was selected purposively rather than randomly, which limits how confidently these findings can be generalized beyond this specific team and age cohort. Third, the study relied on a single team from a single municipality, which leaves open the possibility that team-specific factors, coaching style or existing skill level among them, shaped the results in ways a broader, multi-team study would help clarify. Finally, the study's statistical power was constrained by its small sample size, particularly relevant to the null dribbling finding, which may reflect a true absence of effect, an effect too small for this sample to detect reliably, or both.

DIRECTIONS FOR FUTURE RESEARCH

Building on these findings and limitations, several directions for future research stand out, many of them raised directly by the original study itself. Further studies are needed on the effect of training programs on developing reaction speed specifically, as distinct from the running speed examined here. Research is similarly needed on how training programs affect other football skills beyond dribbling, and on their effect on the tactical dimension of the game, an area the present study did not address. Studies employing a control-group design, rather than the one-group pre-test-post-test approach used here, would help isolate the training program's effect more cleanly from maturation, practice, and other confounding influences. Larger, multi-team samples would help establish how far these findings generalize beyond a single municipal youth team. Finally, given this study's contrasting speed and dribbling results, future work might usefully test training programs that combine progressive speed development with the coordination- and motor-ability-focused elements identified by Samara (1993) and by Ben Bardi (2014/2015) as effective for dribbling specifically, to establish whether a combined program can achieve significant gains on both variables at once.

ACKNOWLEDGMENTS

The author wishes to thank the coaching staff and players of El Marsa Municipality's U15 football team, Chlef Province, for their participation in and cooperation with this study.

CONFLICT OF INTEREST

The author declares no conflict of interest related to the conduct, analysis, interpretation, or publication of this study.

FUNDING

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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