USFD Journal
of Physical Education Pedagogy and Sports Performance

Original Research Article

The Speed Boost Comes More from Dynamic Running Drills Than Neuromuscular Training

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Received: May 2, 2025
Accepted: May 15, 2025
Published: June 30, 2025

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Abstract: Improving sprint performance in adolescents is essential for enhancing physical fitness and athletic development in school-based programs. This quasi-experimental study examined the effects of dynamic running drills and neuromuscular training on the 100-meter sprint performance of Grade 10 students. A total of 89 participants were divided into two groups, (dynamic running drills (n=43) and neuromuscular training (n=46), and underwent an eight-week intervention. The study aimed to determine the sprint performance level of each group before and after the interventions, assess within-group improvements, and evaluate whether there was a significant difference between the two interventions. Descriptive analysis revealed that both groups started with fair-level sprint speeds and improved to the good category after the intervention. Paired samples t-tests indicated significant improvements in both the dynamic running drills group and the neuromuscular training group, highlighting the effectiveness of both approaches in enhancing sprint performance. However, Analysis of Covariance results showed a significant difference in posttest scores between the two groups when pretest scores were controlled, favoring the dynamic running drills. These findings support the Specificity Principle and Feasibility Theory, emphasizing that targeted, sprint-specific training yields greater improvements in performance. The results also confirm existing literature advocating for sprint-focused interventions in adolescent fitness programs, suggesting that integrating such methods into school curricula can effectively develop students' speed and athletic performance.

Keywords: sprint performance, dynamic running drills, neuromuscular training, physical education, quasi-experimental design, adolescent fitness.

Introduction

Sprint performance is a critical component of athletic ability and general physical fitness (Cochrane & Monaghan, 2021). It embodies the integration of neuromuscular coordination, muscular power, biomechanics, and energy system efficiency, all fundamental to successful athletic performance and the promotion of lifelong health and fitness (Cochrane & Monaghan, 2021; Del Rio, 2021). As the sports and fitness industries have expanded, sprinting capabilities have gained increasing recognition beyond elite athletes. This recognition extends into school-based physical education programs, youth sports, and public health initiatives aimed at combating sedentary lifestyles (Bouchard *et al.*, 2015; Xie *et al.*, 2023). The World Health Organization (2022) emphasizes that incorporating sprint-related physical activities significantly contributes to cardiovascular health, muscular development, metabolic efficiency, and overall well-being. Nevertheless, recent reports indicate a decline in physical fitness among youth populations worldwide, particularly in terms of speed and agility. This decline underscores the urgent need for effective interventions that promote fundamental athletic skills, such as sprinting, from an early age (Maaouia *et al.*, 2023; WHO, 2022).

In light of this, the present study investigates the effectiveness of dynamic running drills and neuromuscular training in enhancing 100-meter sprint performance among junior high school students. While it is delimited to a single public high school, this localized scope is justified by recurring national trends in which physical education programs overemphasize traditional team sports. Studies reveal that Filipino high school PE programs consistently favor basketball and volleyball, often neglecting sprint-specific or biomechanics-focused training (Amoloza *et al.*, 2022; Graciano, 2022; Xie *et al.*, 2023). Challenges related to curriculum alignment and inadequate infrastructure further exacerbate this issue, hindering the integration of technical modules, such as sprinting (Tagare & Poblador, 2023).

Additionally, in the context of the Philippine Department of Education's MATATAG curriculum, while the curriculum integrates general fitness components, it offers minimal structured content on sprint-specific training, as revisions and teacher feedback reveal an emphasis on general movement and play rather than speed-focused instruction (Aquino, 2024). As a result, students have limited exposure to sprinting drills, biomechanics instruction, or speed development techniques, which have been identified as a critical gap in both curriculum delivery and teacher training assessments (Xie *et al.*, 2023). Unless enrolled in specialized tracks, such as the Special Program in Sports (SPS), most students do not receive focused training in sprint performance, highlighting a significant limitation in the development of individual athletic capacities within the mainstream physical education (PE) framework (Poblador & Lagunero-Tagare, 2023; Tagare & Poblador, 2023).

This results in limited structured sprint training opportunities (Cruz, 2022; Howard & Scott, 2019). Although previous quantitative studies have demonstrated that sprint-specific drills and neuromuscular conditioning independently enhance sprint outcomes (Álvarez-Serrano *et al.*, 2023; Haugen *et al.*, 2019), a direct comparative analysis of these interventions among adolescent populations has remained scarce. Furthermore, the long-term benefits and comparative effectiveness of these interventions within school settings have not been sufficiently explored.

Empirical evidence has shown that dynamic drills, such as block starts, flying sprints, and speed endurance runs, improve sprint kinematics by enhancing stride frequency, step length, ground contact time, and overall technical efficiency (Haugen *et al.*, 2019; Kovacs *et al.*, 2018; Skoglund *et al.*, 2023). Similarly, neuromuscular training interventions, which involve structured balance, proprioceptive, and strength drills, are quantitatively linked to significant improvements in sprint speed, postural control, and injury prevention (Deschenes, 2019; Grooms *et al.*, 2022; Zouhal *et al.*, 2019). However, many existing studies have primarily focused on adult, elite, or highly trained populations (Murphy *et al.*, 2023). Studies addressing adolescents in school settings have been limited and often characterized by small sample sizes, outdated training methodologies, or short intervention periods, resulting in inconclusive or non-generalizable findings (Grazioli *et al.*, 2020).

There remains a critical gap in understanding how dynamic running drills and neuromuscular training comparatively influence sprint performance among adolescents in structured educational settings (Crenshaw *et al.*, 2023). Addressing this gap is particularly timely given the Philippine Department of Education's renewed emphasis on physical fitness assessments through the Department of Education (DepEd) (2019). Additionally, the increasing prevalence of sedentary behavior among youth underscores the need to integrate evidence-based, scalable interventions into physical education programs (Bouchard *et al.*, 2015). Investigating accessible, efficient, and effective interventions for school-aged populations could directly inform curricular innovation, athletic development strategies, and public health initiatives (Cruz, 2022).

The purpose of this quantitative study is to determine the comparative effects of dynamic running drills and neuromuscular training on the 100-meter sprint performance of Grade 10 students enrolled in a public school in Cagayan de Oro City. The study's independent variables are the type of intervention program employed (dynamic running drills versus neuromuscular training), while the dependent variable is sprint speed, defined operationally as the meters per second achieved during the standardized 100-meter sprint test (Ariani, 2021; DepEd, 2019).

This study aims to address the following research question: What is the 100-meter sprint performance of participants before and after the intervention? Do the sprint performances of the two groups differ significantly before and after the interventions? Which intervention proves more effective in enhancing 100-meter sprint performance? Correspondingly, the hypotheses of the study are: Ho_1: There is no significant difference in the two groups' 100-meter sprint performance before and after the interventions. Ho_2: Neither intervention is significantly more effective than the other in enhancing sprint performance.

Ultimately, this study aims to make a meaningful contribution to the fields of sports science, education, and youth fitness by providing empirical evidence on low-cost, feasible methods to enhance sprint performance in school settings (Álvarez-Serrano *et al.*, 2023; Haugen *et al.*, 2019). Results may assist physical education teachers, athletic coaches, policymakers, and curriculum developers in designing evidence-based sprint training interventions that are adaptable to varied educational contexts (Barrera *et al.*, 2023). Additionally, findings could encourage broader participation in sprint-based and high-intensity activities, promoting health-related fitness, improving motor skills, and reducing obesity rates among adolescents (López-Samanés *et al.*, 2021). Furthermore, the study aims to provide scientific data to support policy revisions concerning physical education content standards, emphasizing the crucial role of sprinting in holistic youth fitness (DeEed, 2019).

The study is limited to Grade 10 students, aged 15–16, enrolled in a single public high school located in Cagayan de Oro City, Philippines. The intervention spans eight weeks and involves structured training sessions conducted three times per week during regular physical education classes (Cruz, 2022). This scope may seem limited, especially in light of the critique toward previous studies with small sample sizes or narrow populations. However, the study does not claim broad generalizability; instead, it aims to provide a context-specific, empirical contribution that addresses gaps in existing Philippine-based literature and serves as a practical pilot framework for future school-based interventions. Sprint performance is measured using the standardized 100-meter sprint test administered before and after the intervention period (Ariani, 2021). Generalizations beyond this demographic and geographical setting should be approached with caution; however, the findings offer valuable insights into the effectiveness of sprint interventions in comparable educational and age-group contexts (Bouchard *et al.*, 2015; Haugen *et al.*, 2019).

Methods and Materials

This study employed a quasi-experimental, pretest-posttest group design to investigate the effects of dynamic running drills and neuromuscular training on sprint performance. The quasi-experimental approach was selected due to the impracticality of random participant assignment within an educational setting, where class structures were determined by administrative schedules (Bärnighausen *et al.*, 2017; Gopalan *et al.*, 2020).

While quasi-experimental designs lack randomization and are thus more susceptible to selection bias, researchers employ several strategies to address this limitation effectively. Matching participants based on baseline characteristics, such as age, performance, or socioeconomic status, helps control for confounding variables (Lam & Wolfe, 2022). Statistical techniques, such as ANCOVA, regression analysis, and propensity score matching, further reduce initial group imbalances (Andrade, 2021). Pretest-posttest designs enable researchers to observe within-group changes, facilitating the isolation of the intervention's effects. Additionally, selecting comparable schools or classrooms and employing advanced methods, such as interrupted time series or regression discontinuity designs, can enhance internal validity without requiring randomization (Cham *et al.*, 2024).

To facilitate comparison, two experimental groups were established: one group underwent dynamic running drills while the other received neuromuscular training. Although a true control group was not included, the differences between the two intervention groups were analyzed (Bärnighausen *et al.*, 2017). While the absence of a non-intervention control group in quasi-experimental research may limit absolute comparisons, this design choice was intentional and rooted in educational ethics and feasibility (Andrade, 2021; Lam & Wolfe, 2022). In school-based studies, withholding physical activity from a group of students for extended periods raises ethical concerns, particularly when both interventions are evidence-based and aligned with curriculum goals (Lam & Wolfe, 2022). The quasi-experimental research prioritized ecological validity by embedding interventions into actual PE classes, which enhances real-world relevance and supports informed programmatic decisions in school contexts (Buenaventura *et al.*, 2024; Lam & Wolfe, 2022).

The sample consisted of 100 Grade 10 junior high school students, 53 of whom were males and 47 of whom were females, aged 15-16 years, from a public high school in Cagayan de Oro City, Philippines. Each intervention group contained 50 students, selected through complete enumeration sampling, where all eligible Grade 10 students were invited to participate based on specific inclusion criteria (Mohapatra, 2020; Turner, 2020). These criteria required students to submit a Health Appraisal Record (HAR), pass the Physical Activity Readiness Questionnaire (PAR-Q), attend a study orientation, and be free from injuries or health conditions. Students who did not satisfy these conditions were excluded from participation. To maintain logistical feasibility and minimize disruptions, assignment to the groups was based on existing class sections. Ethical approval was granted by the institutional Research Ethics Committee, with informed parental consent and student assent obtained prior to the commencement of the study.

The research was conducted in the school quadrangle, an expansive area suitable for sprinting drills. Data collection and interventions occurred during the students' scheduled MAPEH classes to ensure consistency throughout the study (DepEd, 2019). To minimize external variability, environmental conditions—such as surface type, weather, and supervision—were maintained at a constant level (Sánchez-Sánchez *et al.*, 2020).

The independent variables in this study comprised the two intervention types: dynamic running drills and neuromuscular training. This study implemented two targeted interventions, dynamic running drills and neuromuscular training, over eight weeks to enhance 100-meter sprint performance among high school participants. The dynamic running drills group engaged in sprint-specific exercises, including block starts, flying 30s, and speed endurance runs, structured to progressively increase in intensity and volume across three weekly sessions. These drills aligned with the Specificity Principle of Fitness Training, replicating sprint biomechanics and energy demands to improve acceleration, top speed, and anaerobic endurance. Meanwhile, the Neuromuscular Training Group performed lunges, ladder drills, and ball drop reaction drills, designed to develop lower-body strength, agility, balance, and reaction time. Grounded in Feasibility Theory, these exercises were chosen for their effectiveness and practical application within typical school settings. Both interventions followed a progressive overload model, with distinct warm-up, training, and cooldown phases, ensuring safety, consistency, and ecological validity in a real-world PE context.

Each intervention lasted eight weeks, with three sessions weekly, each lasting approximately 45-60 minutes. The dynamic running drills group engaged in block starts, flying 30s, and speed endurance runs aimed at enhancing stride length, stride frequency, and sprint mechanics (Haugen *et al.*, 2019; Kovacs *et al.*, 2018; Skoglund *et al.*, 2023). Conversely, the neuromuscular training group performed ball drop drills, lunges, and ladder drills to target proprioception, balance, and reaction time (Deschenes, 2019; Grooms *et al.*, 2022; Zouhal *et al.*, 2019). Both groups had standardized warm-up and cool-down exercises, and all interventions were supervised by trained MAPEH teachers to ensure uniformity.

The dependent variable measured was the 100-meter sprint performance, assessed in meters per second (m/s). The 100-meter sprint test adhered to the protocols outlined in the DepEd (2019) for the 40-meter sprint. Timing was conducted using digital stopwatches that recorded up to 0.01-second precision. This test has previously been validated for youth fitness assessments, demonstrating high reliability (ICCs ranging from 0.91 to 0.97) in earlier studies (Darrall-Jones *et al.*, 2016; Vanhelst *et al.*, 2016). The concurrent validity and reliability of sprint performance assessment tools were further supported by findings from Nagahara *et al.* (2017) and Simperingham *et al.* (2016). This research also determined the test-retest reliability of the instrument at ϱ = 0.928, ensuring that no modifications were made to the standard 100-meter sprint protocol.

Data collection was carried out in three phases: pretest, intervention, and posttest. During the pretest phase, all participants completed the 100-meter sprint test according to standardized instructions. This was followed by the eight-week intervention phase. Posttest measurements were taken immediately following the intervention, utilizing the same procedures as the pretest. To minimize measurement bias, standardized verbal encouragement and instructions were provided to all participants (Ghanati *et al.*, 2020; Palmer *et al.*, 2022). Furthermore, data collectors were blinded to group assignments during posttesting to reduce bias, thereby enhancing the study's integrity.

Descriptive statistics (mean, standard deviation, frequency distributions) summarized participant characteristics and sprint performance scores. Within-group comparisons (pretest vs. posttest) were analyzed using the Paired Samples t-test. Between-group comparisons were conducted using ANCOVA, which controlled for pretest scores. A significance level of $p < 0.05$ was established. Additionally, effect sizes were calculated to evaluate the magnitude of observed effects.

Results

The results were organized according to the study's research questions, focusing sequentially on (1) the descriptive statistics of the participants' sprint performances, (2) the within-group comparisons of pretest and posttest results, and (3) the between-group comparisons following the interventions.

Tables 1, 2, and 3 (*see p. 18*) summarize the descriptive and inferential statistics findings. The data in these tables were gathered using the 100-meter sprint test, administered before and after the eight-week intervention period. This test was conducted on a standardized surface in a school quadrangle in Cagayan de Oro City. Sprint performance was recorded in seconds using digital stopwatches with 0.01-second precision, and results were converted into meters per second (m/s) for analysis. Pretest and posttest data were recorded for each participant and categorized using established performance ranges, forming the basis for the descriptive statistics (Table 1), paired samples t-tests (Table 2), and ANCOVA (Table 3). All tables were labelled correctly and referenced in the text for clarity and ease of understanding.

As shown in Table 1, the descriptive statistics for the pretest and posttest results of both Group A (Dynamic Running Drills) and Group B (Neuromuscular Training) indicate increases in the mean sprint performance scores. Group A improved from a pretest mean of 5.38 m/s (SD = 1.01) to a posttest mean of 5.96 m/s (SD = 0.97), whereas Group B increased from 5.39 m/s (SD = 0.69) to 5.73 m/s (SD = 0.72). This also means that after the intervention, Group A became 2.26 seconds faster, while Group B also ran 1.35 seconds faster. Students in Group A (Dynamic Running Drills) initially had most participants at the ***fair*** level (44.19%), with no one at the ***outstanding*** level. There were no students categorized in the ***poor*** bracket after the intervention, and 25.58% of them made it to ***very good,*** and the average student changed their category from 5.38 m/s under ***fair*** to 5.96 m/s under ***good***.

In Table 2, there was a significantly higher mean average sprint speed of the dynamic running drills group from 5.38 m/s (SD = 1.01) to 5.96 m/s (SD = 0.97; $t(42) = -10.543$, $p < 001$), the effect size was large (-1.608). Likewise, the Neuromuscular Training group increased from a pretest mean of 5.39 (SD = 0.69) to a posttest mean of 5.73 (SD = 0.72), which was found to be also significantly different ($t(45) = -9.891$, $p < .001$) with a large effect size of -1.458.

Table 3 displays the ANCOVA results comparing posttest sprint performance between the dynamic running drills and neuromuscular training groups, while controlling for their pretest scores. The ANCOVA analyses of the post anchor posttest scores (rank transformed for normality) revealed a significant interaction effect between group and condition, $F(1, 86) = 580.283$, $p < .001$, and the effect size of the partial eta squared is large ($\eta_p^2 = 0.871$).

While the results reveal significant improvements across both groups, it is important to acknowledge potential confounding factors that may have influenced individual performance gains. Differences in biological maturity, motivation levels, diet quality, and sleep duration were not directly controlled or measured in this study. These variables may have affected participants' recovery, effort levels, and physiological adaptation to training. Although randomization was not feasible due to class-based groupings, consistent supervision, structured interventions, and standardized test administration were employed to reduce variability and promote internal validity.

Discussion

This discussion is organized in parallel with the structure of the results section, addressing the three research problems: (1) describing the overall sprint performance before and after the interventions, (2) comparing pretest and posttest outcomes within each group, and (3) determining which intervention was more effective. The clustering of posttest scores into the ***good*** and ***very good*** categories across both groups, and the absence of students in the ***poor*** category after the intervention, indicate significant improvements in sprint performance. This trend was especially pronounced in the dynamic running drills group, which showed an average improvement of 2.26 seconds compared to 1.35 seconds in the neuromuscular training group. These findings reflect gains in sprint velocity and suggest successful adaptation to the training stimuli (Cochrane & Monaghan, 2021; Kramer *et al.*, 2021).

These outcomes are consistent with the findings of Haugen *et al.* (2019) and Palmer *et al.* (2019), who demonstrated the efficacy of sprint-specific and neuromuscular-focused interventions in improving speed and biomechanical efficiency. The observed increases in mean sprint velocity and transition into higher performance categories support the assertion that repeated, structured exposure to either intervention yields substantial physiological benefits in adolescent populations (Murphy *et al.*, 2023; Tottori *et al.*, 2021).

Paired samples t-tests confirmed that both dynamic running drills and neuromuscular training groups experienced statistically significant improvements in 100-meter sprint performance. The large effect sizes suggest meaningful within-group progress, indicating the training programs elicited neuromuscular and biomechanical adaptations. These improvements align with Brearley and Bishop's (2019) Specificity Principle and Valero-Cuevas *et al.*'s (2023) Feasibility Theory, which suggest that properly dosed, context-specific exercises enhance task-relevant motor outputs (Monte & Zamparo, 2019).

Repetitive exposure to sprints, combined with structured warm-ups, rest intervals, and cooldown routines, likely enhances motor learning. Ghanati *et al.* (2020) found that consistent practice routines contribute to concentration and the efficient acquisition of motor patterns. The observed gains across both interventions can be partially attributed to this regimen. Students benefited from repeated movement cycles that likely enhanced their proprioception, limb coordination, and muscular response times, resulting in improved sprint mechanics (Baena-Raya *et al.*, 2021).

ANCOVA results further clarified the relative effectiveness of the interventions, controlling for pretest performance. Dynamic running drills were significantly more effective than Neuromuscular Training, suggesting that task-specific, sprint-focused activities elicit greater performance improvements than general strength or coordination exercises (Haugen *et al.*, 2019; Skoglund *et al.*, 2023).

Dynamic sprint drills such as block starts, flying 30s, and speed endurance training provided direct biomechanical and neuromuscular stimulation (Wang, 2023; Skoglund *et al.*, 2023). These drills focused on acceleration, cadence, and ground contact mechanics, which are crucial in 100-meter sprints. Wu *et al.* (2025) emphasize that speed endurance training enhances maximal effort capacity and reduces the risk of injury.

Conversely, neuromuscular training improved general coordination and muscle activation but lacked the specific biomechanical mimicry of actual sprinting. Lloria-Varella *et al.* (2023) and Wang *et al.* (2022) demonstrated that while neuromuscular training improves baseline fitness, it may be insufficient to trigger sprint-specific adaptations unless combined with more targeted drills.

Meanwhile, both interventions may have strengthened muscle-tendon units, improved joint stiffness regulation, and enhanced the stretch-shortening cycle. Regular exposure to maximal or near-maximal sprints contributes to anaerobic conditioning and lactate threshold shifts, both of which are necessary for improved sprint duration and recovery (Álvarez-Serrano *et al.*, 2023).

Although the interventions were effective, several uncontrolled variables could have contributed to performance changes. Differences in biological maturity, motivational states, dietary patterns, and sleep quality among participants may have influenced their adaptation rates (Matsumura *et al.*, 2022). These confounding variables were not directly controlled or measured due to logistical constraints inherent in the school-based setting.

Nonetheless, all training was implemented under consistent conditions with adequate teacher supervision and time-of-day control, minimizing environmental biases. The use of a standardized digital timing system ensured precision in outcome measurement (Sánchez-Sánchez *et al.*, 2020).

From a pedagogical standpoint, the findings underscore the need to integrate sprint-specific drills in school athletic programs. The feasibility and impact of dynamic drills suggest they can be readily adapted even in resource-limited settings. Teachers and coaches should prioritize movement-specific interventions, as these are more likely to result in measurable gains in adolescent performance (Alexander *et al.*, 2019; Faelli *et al.*, 2021).

Furthermore, the superior effect of dynamic running drills reinforces the importance of exercise specificity in Physical Education. These findings advocate for curriculum development that mirrors actual sports demands, ensuring alignment between training protocols and performance outcomes. This is especially relevant in junior athletic development programs where foundational speed, coordination, and agility are key (Rasyid *et al.*, 2023).

Conclusion

Based on the findings, the objective to evaluate the effectiveness of dynamic running drills and neuromuscular training on the 100-meter sprint performance of Grade 10 students has been met. Both interventions significantly improved sprint performance; however, dynamic running drills yielded more substantial gains, supporting the Specificity Principle, which emphasizes the role of task-specific practice in enhancing athletic performance, and the Feasibility Theory, which advocates for practical, context-appropriate training methods in real-world educational settings.

These results highlight the value of incorporating sprint-focused drills—such as block starts, flying sprints, and speed endurance runs—into school-based physical education programs. These drills directly simulate sprint biomechanics, leading to improved stride frequency, ground contact efficiency, and acceleration. While neuromuscular training also promoted improvements through enhanced proprioception, coordination, and balance, its effects were comparatively less pronounced in developing sprint-specific mechanics.

The study highlights that while both training approaches contribute to adolescent fitness and motor development, dynamic running drills are more effective in enhancing sprint speed within a structured school context. Importantly, this does not diminish the value of neuromuscular training, which remains a vital component of injury prevention and baseline movement quality. Instead, the findings suggest that integrating both modalities—sprint-specific drills for direct performance gains and neuromuscular training for foundational movement support—offers a balanced and developmentally appropriate approach to adolescent athletic development.

From a pedagogical standpoint, integrating such interventions into physical education curricula is both feasible and impactful, especially in resource-constrained settings. Teachers and curriculum developers are encouraged to design PE programs that include structured, progressive sprint drills alongside general strength and coordination training. Sample applications include: (1) embedding sprint drills into fitness modules; (2) allocating weekly sessions focused on acceleration and speed mechanics; (3) using task-specific warm-ups and cooldowns; and (4) rotating students through sprint and neuromuscular circuits tailored to their fitness levels.

While the quasi-experimental design and context-specific sample (Grade 10 students from a single public high school) limit generalizability, the findings provide a strong case for scaling similar interventions in comparable educational settings. Future research may explore the longitudinal effects of combined sprint and neuromuscular training, test these methods across different age groups and regions, and adopt randomized controlled trials (RCTs) to strengthen causal inferences. Such investigations can further guide evidence-based physical education reforms, promote functional fitness, and address the decline in youth sprint performance globally.

Conflict of Interest: *The authors declare that there is no conflict of interest regarding the publication of this article.*

Acknowledgements: *The researcher extends heartfelt gratitude to the school administrators, teachers, student-athletes, and parents of the participating public secondary school for their unwavering support and cooperation throughout the research journey. Special thanks are extended to the research panel members and mentor who guided the development of the study focused on sprint performance enhancement among Grade 10 students, helping shape its direction with their valuable insights and feedback.*

Funding: *This research received no external funding and was supported solely by the personal resources of the primary author.*

Ethical Approval: *The study was reviewed and approved by the Institutional Ethics Committee of the researcher's academic institution, adhering to the ethical standards outlined in the Belmont Report. Informed assent was obtained from student participants, alongside written parental consent, ensuring full ethical compliance.*

AI Declaration: *This study utilized artificial intelligence tools to assist in the preparation of this article. Specifically, ChatGPT was used to convert the full thesis manuscript into a reduced journal article format with human supervision and editing, ensuring academic rigor and integrity. Additionally, Grammarly AI was used to enhance the language quality, clarity, and tone of the final manuscript. The author carefully reviewed and edited all outputs to maintain scholarly standards.*

Data Availability Statement: *The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request. Requests for access will be evaluated in accordance with ethical guidelines and data privacy policies.*

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Table 1

Descriptive Statistics of Pretest and Posttest Scores by Performance Category for Dynamic Running Drills and Neuromuscular Training

			Group A				Group B			
			Dynamic Running Drills				**Neuromuscular Training**			
			Pre-test		Posttest		Pre-test		Posttest	
Range (m/s)		Description	f	%	F	%	f	%	f	%
7.56	10.00	Outstanding	0	0.00	2	4.65	0	0.00	0	0.00
6.56	7.55	Very Good	6	13.95	11	25.58	2	4.35	8	17.39
5.46	6.55	Good	14	32.56	13	30.23	19	41.30	19	41.30
4.06	5.45	Fair	19	44.19	17	39.53	24	52.17	19	41.30
1.00	4.05	Poor	4	9.30	0	0.00	1	2.17	0	0.00
		TOTAL	40	100	43	100	43	100	46	100
		Mean	5.38		5.96		5.39		5.73	
		Description	Fair		Good		Fair		Good	
		Standard Deviation	1.01		0.97		0.69		0.72	

Table 2

Paired Samples T-test Results Comparing Pretest and Posttest Scores for Dynamic Running Drills and Neuromuscular Training

Groups	Pretest		Posttest		df	t	p
	M	SD	M	SD			
Dynamic Running Drills	5.38	1.01	5.96	0.97	42	-10.543*	<.001
Neuromuscular Training	5.39	0.69	5.73	0.72	45	-9.891*	<.001

** Significant at 0.05 level.*

Table 3

Analysis of Covariance Results for Posttest Scores Controlling for Pretest

Groups	Pretest		Posttest		F(1,86)	p	η_ρ^2
	M	SD	M	SD			
Dynamic Running Drills	5.38	1.01	5.96	0.97	580.283*	<.001	0.871
Neuromuscular Training	5.39	0.69	5.73	0.72			

**Significant at 0.05 level.*