

The Development of Compound Movement Training Programs to Enhance Agility in Students at Qilu University of Technology

¹Jibao Xiong, ^{2*}Jakrin Duangkam, and ³Ekasak Hengsukho

Physical Education and Health Education, Faculty of Education,

Udon Thani Rajabhat University, Thailand

E-mail: ¹489276714@qq.com, ^{2*}jakrin.d@udru.ac.th, ³ekasak.he@udru.ac.th

Received April 30, 2025; **Revised** May 20, 2025; **Accepted** June 20, 2025

Abstract

This study aimed to 1) study the development of compound movement training programs to enhance agility in students and 2) compare the compound movement training programs to enhance agility in students before, after 4 weeks, and after 8 weeks. This quasi-experimental study involved 60 college students who met the inclusion criteria and were assigned to three experimental groups using a group matching method. The research instruments included 1) traditional training programs, multi-function training programs, and compound training programs by 5 experts analyzing content validity with an IOC average between 0.82, 0.86, and 0.88, respectively. 2) The agility test collection includes the T-agility test, Illinois agility test, and hexagonal jump agility test with a reliability of 0.85, 0.83, and 0.82, respectively. Data were collected three times before the experiment and after the experiment at 4 weeks and 8 weeks and were analyzed by means, standard deviation, one-way ANOVA with repeated measures, and post hoc multiple comparisons LSD. The significance level was 0.05.

Research findings were as follows: 1. The results of the agility of students found that when compared with traditional training programs, multifunctional training programs, and compound training programs, the students' agility can be developed with significance at the .05 level. 2. After the experiment, the results at different times were compared. From the results of the pre-training, after 4-week and after 8-week tests, the compound training group showed the greatest and most consistent improvement over time, with statistically significant gains in all agility variables at the .05 level.

Keywords: Traditional programs; Multi-function programs; Compound programs; Agility; Qilu University of Technology

Introduction

Agility is a vital component of athletic performance, defined as the capacity to change direction quickly and efficiently while maintaining balance and control (Sheppard & Young, 2006). Among college students especially those involved in sports or physical activity enhancing agility not only supports athletic excellence but also plays a key role in improving physical fitness and reducing injury risk. While traditional agility training often focuses on repetitive drills, recent research highlights the superior benefits of compound movement training. This method integrates strength, speed, coordination, and directional change into dynamic movement patterns (Chaabene & Negra, 2017). Such an approach offers a more functional and sport-specific means to develop agility, with proven advantages in real-world athletic contexts (Young et al., 2015).

In the context of Chinese higher education, institutions like Qilu University of Technology have increasingly prioritized holistic student wellness. However, agility training programs within university physical education curricula remain limited in scope and structure. As Chinese universities seek to modernize fitness strategies, compound training emerges as a contextually relevant solution bridging gaps between traditional methods and modern performance needs. This study, therefore, aims to design and assess a compound movement training program tailored to university students, grounded in both empirical evidence and institutional relevance. By combining elements such as plyometric drills, resistance exercises, and change-of-direction tasks, the intervention aligns with recommendations from recent studies showing the effectiveness of integrated agility training (Paul et al., 2016; Forster et al., 2022). This research holds both theoretical value and practical impact, aiming to enhance student agility and contribute to the evolving landscape of physical education and health promotion in Chinese universities.

Research Objectives

1. Development of compound movement training programs to enhance agility in students at Qilu University of Technology.
2. Compare the compound movement training programs to enhance agility in students before, after 4 weeks, and after 8 weeks at Qilu University of Technology.

Literature Review

Agility is a multifaceted physical ability involving rapid acceleration, deceleration, changes of direction, and perceptual decision making (Sheppard & Young, 2006). This complexity has prompted a growing body of research exploring integrative training methods that go beyond traditional drills. Traditional agility training typically involves linear sprints or pre-planned changes of direction.

1. Recent findings and theoretical perspectives Chaabene and Negra (2017) reviewed the effectiveness of compound training, which integrates resistance, plyometric, and movement-specific drills, noting its capacity to improve neuromuscular coordination and enhance functional movement patterns. Their findings support a shift from isolated training toward holistic programming. Forster et al. (2022) provided empirical evidence that agility training incorporating cognitive decision-making (e.g., reaction to stimuli) significantly improved reaction time, coordination, and game-transfer performance in student athletes. Moreover, Negra et al. (2020) demonstrated that compound-based approaches enhanced lower limb asymmetries and agility in young soccer players.

2. Knowledge gap in university-based agility training While the literature highlights benefit of compound and multi-functional training, most studies focus on elite or adolescent athletes in sport specific contexts. There is a notable lack of research targeting general university students, particularly in Asia, who do not receive sport-specific coaching but could benefit from agility training for health, injury prevention, and lifelong fitness. Studies such as those by Buchheit et al. (2014) acknowledge this gap, calling for age-appropriate and population-specific programs that address both physical and cognitive dimensions of agility. Furthermore, no studies have been identified that assess the impact of compound agility programs within Chinese universities, highlighting both a geographical and contextual gap. This presents an opportunity to develop a structured training model that is relevant, feasible, and educationally sound for general student populations.

3. Systematizing the relationship between studies Table 1 presents a comparative synthesis of three major training modalities commonly discussed in agility research:

Table 1 comparative synthesis of three training type in agility.

Training Type	Focus	Limitations	Benefits
Traditional Training	Basic linear drills and simple change of direction	Low variability; limited transfer to game situations	Easy to implement; improves basic motor control
Multi-function Training	Mix of drills (e.g., ladders, cones, plyometrics)	May lack structured progression or specificity	Engages multiple skills; moderately functional
Compound Training	Integration of strength, speed, coordination, and agility	Requires careful planning and load management	High transferability; improves real-world and sport performance

Table 1 shows that: This comparison illustrates that compound training offers superior adaptability for educational use, as it not only improves physical outcomes but also cognitive and motor integration, aligning with both physiological principles and pedagogical goals.

Summary of the Literature Review

The literature review draws upon key concepts from:

Motor learning theory (Magill & Anderson, 2017), which emphasizes skill acquisition through task-specific, variable practice.

Specificity of training (Hoffman, 2014), which asserts that performance improvements are most effective when training replicates actual movement demands.

Neuromuscular adaptation frameworks, supporting progressive overload and complex motor task development.

These theories were applied in the following areas of this research:

Program design: Integrating compound drills that develop coordination, strength, and cognitive reactivity.

Population targeting: Addressing a non-athlete university student group with limited prior agility training exposure.

Assessment tools: Selecting agility tests that measure both physical and cognitive response.

This research, therefore, fills both a theoretical gap (in how integrated training can serve educational populations) and a practical gap (in implementing such programs in non-sport university settings).

Conceptual Framework

This research is a research study. The Development of Compound Movement Training Programs to Agility in Qilu University of Technology College Students: from a review of related literature, the research concept can be summarized as follows:

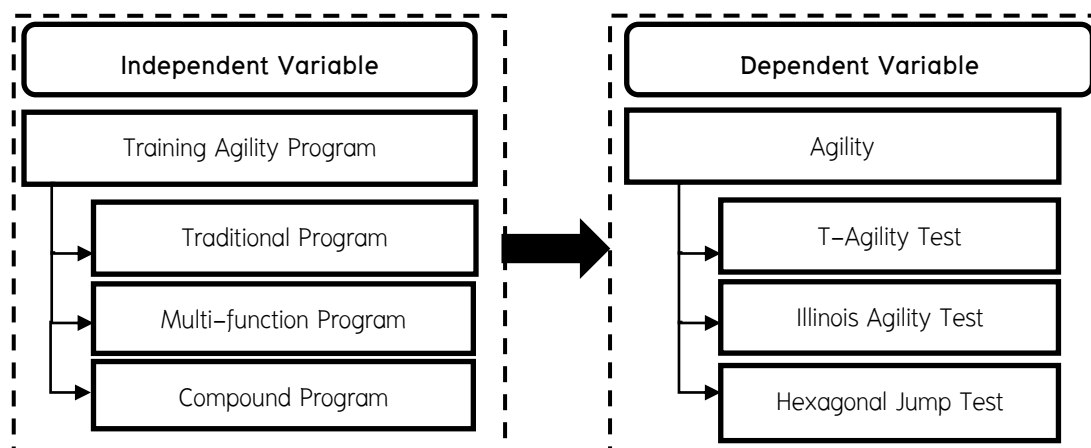


Figure 1 Conceptual Framework

Research Methodology

1. Research Design

This study a quasi-experimental design using a repeated measures approach to evaluate the effectiveness of three training programs traditional, multi-function and compound on student agility. Supporting research techniques included the literature review method, expert interviews, and mathematical statistical analysis.

2. Population and Sample

The population comprised 1,210 students enrolled in physical education courses at Qilu University of Technology. A total of 60 students volunteered and were selected as the research sample after passing physical readiness screening criteria. Participants were divided into three experimental groups (n = 20 each) using group matching based on gender, age, and baseline agility scores: Group 1: Traditional training program, Group 2: Multi-function training program Group 3: Compound training program. Each group trained three times per week for a period of 8 weeks.

This study was reviewed and approved by the Ethics Board of Udon Thani Rajabhat University (HECUD.269/2024).

3. Research instruments

The research instruments consisted of:

Training Programs: Three training schemes (traditional, multi-function, compound) were developed and validated by five experts in physical education. Content validity was evaluated using the Item-Objective Congruence (IOC) method, with scores of 0.82, 0.86, and 0.88 respectively.

Agility Tests:

T-Agility Test (reliability = 0.85)

Illinois Agility Test (reliability = 0.83)

Hexagonal Jump Agility Test (reliability = 0.82)

These tools were selected for their suitability in measuring multidimensional agility performance.

4. Data collection

Data were collected over a period of 8 weeks, with measurements taken at three time points:

1. Pre-Test: Before training program
2. Post-Test: After the 4 weeks of the training program
3. Post-Test: After the 8 weeks of the training program

5. Data Analysis

The analysis methods are as follows:

1. The mean and standard deviation for both the experimental groups.
2. Compared Agility (T-agility test, Illinois agility test, and hexagonal jump agility test) at three time points (before the experiment, after 4 weeks, and after 8 weeks) using:

2.1 One-Way ANOVA with Repeated Measures to analyze within-group and between-group differences, with Post hoc multiple comparisons LSD. The level of statistical significance was set at $p < 0.05$.

Research Results

Objective 1. The results showed that in the mean agility in the three experimental group were different at the time before the experiment, after 4 weeks, and after 8 weeks the experiment. The researcher therefore performed a One-Way ANOVA with repeated measures analysis of variance is shown in Table 2.

Table 2 Results of One-way ANOVA repeated measure Analysis of Variance on the mean agility in the three experimental group at the time before the experiment, after 4 weeks, and after 8 weeks the experiment.

Traditional group n=20	Source of variation	SS	df	MS	F	p
1. T-agility test	Between	6.52	2	3.26	26.05	0.00*
	Within	7.14	57	0.13		
	Total	13.66	59	3.39		
2. Illinois test	Between	6.29	2	3.15	12.87	0.00*
	Within	13.94	57	0.24		
	Total	20.23	59	3.39		
3. Hexagonal jump test	Between	7.35	2	3.68	61.64	0.00*
	Within	3.40	57	0.06		
	Total	10.75	59	3.74		
Multi-function group n=20	Source of variation	SS	df	MS	F	p
1. T-agility test	Between	14.74	2	7.37	29.72	0.00*
	Within	14.14	57	0.25		
	Total	28.88	59	7.62		
2. Illinois test	Between	16.57	2	8.28	61.54	0.00*
	Within	6.46	57	0.11		
	Total	23.03	59	8.39		
3. Hexagonal jump test	Between	15.33	2	7.67	200.89	0.00*
	Within	2.17	57	0.04		
	Total	17.50	59	7.71		
Compound group n=20	Source of variation	SS	df	MS	F	p
1. T-agility test	Between	28.11	2	14.05	79.73	0.00*
	Within	10.05	57	0.18		
	Total	38.16	59	14.23		
2. Illinois test	Between	29.90	2	14.95	73.13	0.00*
	Within	13.85	57	0.24		
	Total	43.75	59	15.19		
3. Hexagonal jump test	Between	27.76	2	13.88	280.69	0.00*
	Within	2.82	57	0.05		
	Total	30.58	59	13.93		

* $p < .05$

Table 2 shows that: All 3-group experimental there are significant differences agility significant at level 0.05.

Experimental group 1 T-agility ($F=26.05$, $p=0.00^*$), Illinois agility ($F=12.87$, $p=0.00^*$), and hexagonal jump agility ($F=61.64$, $p=0.00^*$). Experimental group 2 T-agility ($F=29.72$, $p=0.00^*$), Illinois agility ($F=61.54$, $p=0.00^*$), and hexagonal jump agility ($F=200.89$, $p=0.00^*$). Experimental group 3 T-agility ($F=79.73$, $p=0.00^*$), Illinois agility ($F=73.13$, $p=0.00^*$), and hexagonal jump agility ($F=280.69$, $p=0.00^*$).

To know which stages of the experimental groups are different. The researcher therefore tested the differences in pairs using the LSD method is shown in Table 3.

Table 3 Results of Pairwise Comparisons of the Mean Agility of the All-Experimental Group Over Time.

	Time		Mean	Comparison	<i>p</i>
Traditional group n=20					
T-agility test(A)	Pre-test	A _T 1	11.61	A _T 1-A _T 2	0.00*
	After 4 weeks	A _T 2	11.21	A _T 2-A _T 3	0.00*
	After 8 weeks	A _T 3	10.80	A _T 3-A _T 1	0.00*
Illinois test (B)	Pre-test	B _T 1	17.98	B _T 1-B _T 2	0.00*
	After 4 weeks	B _T 2	17.61	B _T 2-B _T 3	0.00*
	After 8 weeks	B _T 3	17.19	B _T 3-B _T 1	0.00*
Hexagonal jump test (C)	Pre-test	C _T 1	4.89	C _T 1-C _T 2	0.00*
	After 4 weeks	C _T 2	4.52	C _T 2-C _T 3	0.00*
	After 8 weeks	C _T 3	4.03	C _T 3-C _T 1	0.00*
Multi-function group n=20					
T-agility test(A)	Pre-test	A _M 1	11.60	A _M 1-A _M 2	0.00*
	After 4 weeks	A _M 2	10.79	A _M 2-A _M 3	0.00*
	After 8 weeks	A _M 3	10.41	A _M 3-A _M 1	0.00*
Illinois test (B)	Pre-test	B _M 1	18.06	B _M 1-B _M 2	0.00*
	After 4 weeks	B _M 2	17.18	B _M 2-B _M 3	0.00*
	After 8 weeks	B _M 3	16.80	B _M 3-B _M 1	0.00*
Hexagonal jump test (C)	Pre-test	C _M 1	4.91	C _M 1-C _M 2	0.00*
	After 4 weeks	C _M 2	4.13	C _M 2-C _M 3	0.00*
	After 8 weeks	C _M 3	3.69	C _M 3-C _M 1	0.00*
Compound group n=20					
T-agility test(A)	Pre-test	A _C 1	11.62	A _C 1-A _C 2	0.00*
	After 4 weeks	A _C 2	10.40	A _C 2-A _C 3	0.00*
	After 8 weeks	A _C 3	10.01	A _C 3-A _C 1	0.00*

	Time		Mean	Comparison	p
Illinois test (B)	Pre-test	B _c 1	18.05	B _c 1-B _c 2	0.00*
	After 4 weeks	B _c 2	16.80	B _c 2-B _c 3	0.00*
	After 8 weeks	B _c 3	16.40	B _c 3-B _c 1	0.00*
Hexagonal jump test (C)	Pre-test	C _c 1	4.90	C _c 1-C _c 2	0.00*
	After 4 weeks	C _c 2	3.71	C _c 2-C _c 3	0.00*
	After 8 weeks	C _c 3	3.30	C _c 3-C _c 1	0.00*

*p<.05

Table 3 shows that the results of multiple comparisons revealed statistically significant improvements across all three testing periods pre-test, after 4 weeks, and after 8 weeks with *p<.05. All groups demonstrated notable gains in agility, speed, flexibility, coordination, and jumping ability, indicating continued physical development throughout the intervention. Among the three training groups, the compound training group consistently outperformed the others at all time points, with particularly strong improvements observed in the T-agility test, Illinois agility test, and hexagonal jump test. These findings suggest that compound movement training has the most pronounced effect on enhancing overall agility-related performance.

The multi-function training group also showed improvement, especially in the T-agility test during the early phase of the intervention. However, the degree of improvement varied widely among individuals, indicating greater inter-individual variability in response to this training method. In contrast, the traditional training group displayed stable but comparatively modest gains across all measures, maintaining consistent performance but with smaller improvements relative to the other two groups.

Objective 2. Results comparison of mean agility in students between the three experimental group at the time before the experiment, after 4 weeks, and after 8 weeks.

Table 4 Results of One-way ANOVA repeated measure Analysis of Variance on the mean agility between the three experimental group at the time before the experiment, after 4 weeks, and after 8 weeks the experiment.

	Traditional group		Multi-function		Compound group		F	p
	(n=20)		group (n=20)		(n=20)			
	Mean	SD	Mean	SD	Mean	SD		
Pre-test								
1. T-agility test	11.61	0.45	11.60	0.36	11.62	0.38	0.01	0.99
2. Illinois test	17.98	0.49	18.06	0.54	18.05	0.52	0.14	0.87
3. Hexagonal jump test	4.89	0.15	4.91	0.10	4.90	0.19	0.12	0.89

	Traditional group		Multi-function		Compound group		F	p
	(n=20)		group (n=20)		(n=20)			
	Mean	SD	Mean	SD	Mean	SD		
After 4 weeks								
1. T-agility test	11.21	0.23	10.79	0.50	10.40	0.37	23.16	0.00*
2. Illinois test	17.61	0.54	17.18	0.10	16.80	0.62	14.54	0.00*
3. Hexagonal jump test	4.52	0.24	4.13	0.19	3.71	0.23	68.85	0.00*
After 8 weeks								
1. T-agility test	10.80	0.35	10.41	0.60	10.01	0.52	12.40	0.00*
2. Illinois test	17.19	0.45	16.80	0.19	16.40	0.27	30.39	0.00*
3. Hexagonal jump test	4.03	0.32	3.69	0.26	3.30	0.25	36.00	0.00*

* $p < .05$

As shown in Table 4, there are significant agility performance differences across the three training groups over time. All agility metrics were similar between groups at pre-test $*p < .05$, suggesting baseline equality. Training for 4–8 weeks resulted in significant gains $*p < .05$ in all tests: T-agility, Illinois agility, and hexagonal jump. The compound training group had the lowest mean scores in all post-tests, indicating faster and more agile reactions. Multi-function group showed moderate improvement by week 4, but more variability. Traditional training made slower improvement than the other two.

Table 5 Results of pairwise comparisons of the mean agility of the three experimental group at the time after 4 weeks and after 8 weeks the experiment

After 4 weeks		Time	Mean	Comparison	p
T-agility test (A)	Traditional group	AT	11.21	AT-AM	0.00*
	Multi-function group	AM	10.79	AM-AC	0.00*
	Compound group	AC	10.40	AC-AT	0.00*
Illinois test (B)	Traditional group	BT	17.61	BT-BM	0.00*
	Multi-function group	BM	17.18	BM-BC	0.00*
	Compound group	BC	16.80	BC-BT	0.00*
Hexagonal jump test (C)	Traditional group	CT	4.52	CT- CM	0.00*
	Multi-function group	CM	4.13	CM-CC	0.00*
	Compound group	CC	3.71	CC-CT	0.00*
After 8 weeks		Time	Mean	Comparison	p
T-agility test (A)	Traditional group	AT	10.80	AT-AM	0.00*
	Multi-function group	AM	10.41	AM-AC	0.00*
	Compound group	AC	10.01	AC-AT	0.00*

After 4 weeks	Time		Mean	Comparison	<i>p</i>
Illinois test (B)	Traditional group	BT	17.19	BT–BM	0.00 [*]
	Multi–function group	BM	16.80	BM–BC	0.00 [*]
	Compound group	BC	16.40	BC–BT	0.00 [*]
Hexagonal jump test (C)	Traditional group	CT	4.03	CT– CM	0.00 [*]
	Multi–function group	CM	3.69	CM–CC	0.00 [*]
	Compound group	CC	3.30	CC–CT	0.00 [*]

* $p < .05$

As shown in Table 5 the result after 4 weeks and After 8 weeks the compound training group demonstrated significantly superior performance across all agility tests compared to the traditional and multi–function groups. The most notable improvements were observed in the T–agility, Illinois, and hexagonal jump tests, confirming the compound method’s effectiveness in enhancing agility.

Discussions

This study examined the comparative effects of three training methods traditional, multi–function, and compound on agility development among male college students. Results were assessed through three standardized agility tests: the T–agility test, Illinois agility test, and hexagonal jump agility test. While all groups demonstrated improvement, the degree and consistency of progress varied notably.

1. Key Agility Improvements and Theoretical Alignment

The most significant and consistent gains were observed in the compound training group, particularly after the fourth week. These results strongly align with Kusnanik et al. (2019), who emphasized the value of reactive and integrative drills combining sprinting and directional changes. Jeffreys (2017) also emphasized that agility is best developed through programs that combine strength, coordination, and cognitive components elements inherent in compound training. The superior performance of the compound group across all tests supports the assertion of Sporiš et al. (2010), Xie et al. (2023) who found that systematic agility–focused programs can simultaneously improve neuromuscular responsiveness and power output.

Notably, Jeffreys highlighted the importance of multi–planar movements and context–specific drills, which compound training integrates more effectively than traditional or isolated routines.

2. Performance Differentiation Across Training Programs

Specific insights can be drawn from each agility test:

T-Agility Test: The compound group significantly outperformed both the traditional and multi-function groups by week 8. This suggests that training incorporating cognitive reactivity and directional speed enhances short-area movement agility. The findings reflect Wang et al. (2024) and Kusnanik et al. (2019), who noted that compound-based approaches increase directional responsiveness.

Illinois Agility Test: The multi-function group showed improvement but was still outpaced by the compound group. The layered nature of compound training—blending strength, speed, and coordination may offer broader benefits across longer-distance agility trials (Sporiš et al., 2010).

Hexagonal Jump Test: The compound group again exhibited the highest gains. These results align with Bhat et al. (2017), Xie et al. (2023) who reported that circuit-integrated, whole-body movement training enhances agility linked neuromuscular control.

3. Reflections on Traditional and Multi-Function Approaches

While both the traditional and multi-function groups showed progress, their gains were more modest and less consistent. The traditional group, despite improvements, lacked the complexity and variability that agility training requires Jeffrey (2017). The multi-function group displayed stronger outcomes than the traditional group, especially in the T-agility test, echoing Siriworakunsak and Sengsoon (2021), who found that balance-focused, multi-modal training helps in developing body control and reactive movement.

Knowledge from Research

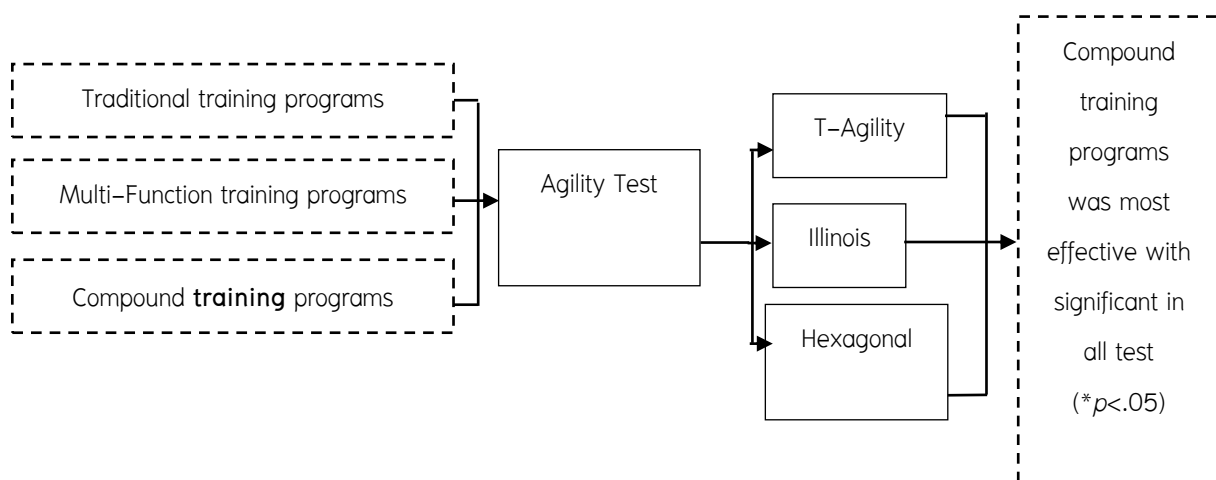


Figure 2 Knowledge from Research

The study compared traditional, multi-function, and compound agility training for college students to improve agility. The research investigated agility before, after 4, and after 8 weeks of training using T-agility, Illinois agility, and hexagonal jump tests. Compound agility training outperformed the other two approaches, showing substantial improvements in all three assessments ($p < 0.05$). The compound group exceeded all measures in agility, improving faster and longer over 8 weeks. This showed that compound agility training is the best way to improve college students' agility immediately and long-term.

Conclusion

This study concluded that compound agility training is the most effective method for enhancing agility in college students. Compared to traditional and multi-function training, the compound group showed significantly better performance across all tests T-agility, Illinois agility, and hexagonal jump especially after 8 weeks of training. Improvements were observed at both 4 and 8 weeks, with the compound group consistently outperforming the others, indicating both rapid and sustained gains in agility. These findings support the adoption of compound agility training as a preferred method in collegiate physical education programs.

Suggestions

Suggestions for this study:

Coaches and PE instructors should prioritize compound training methods to achieve rapid and sustained agility improvements within short-term programs (e.g., 8 weeks).

Compound training should be integrated into physical education curricula to develop students fundamental motor skills and long-term movement efficiency.

Suggestions for future researchers:

1. Expand comparisons to different age groups (e.g., high school, older adults) or athletes from various sports to test broader applicability.
2. Explore longer intervention periods and their effects on agility retention and injury prevention.

References

- Bhat, A. R., Ahmad, J. S., & Kalimuthu, M. (2017). Effect of circuit training on agility of college male students. *Forensic Science & Addiction Research*, 1(1), 1–15.
<https://doi.org/10.31031/FSAR.2017.01.000503>
- Buchheit, M., Simpson, B. M., Al Haddad, H., Bourdon, P. C., & Mendez–Villanueva, A. (2012). Monitoring changes in physical performance with heart rate measures in young soccer players. *European Journal of Applied Physiology*, 112(2), 711–723.
<https://doi.org/10.1007/s00421-011-2014-0>
- Chaabene, H., & Negra, Y. (2017). The effect of plyometric training volume on athletic performance in prepubertal male soccer players. *International Journal of Sports Physiology and Performance*, 12(9), 1205–1211. <https://doi.org/10.1123/ijsp.2016-0372>
- Forster, J. W. D., Uthoff, A. M., Rumpf, M. C., & Cronin, J. B. (2023). Training to improve pro-agility performance: A systematic review. *Journal of Human Kinetics*, 85(1), 35–51.
<https://doi.org/10.2478/hukin-2022-0108>
- Hoffman, J. (2014). *Physiological aspects of sport training and performance* (2nd ed.). Human Kinetics.
- Jeffreys, I. (2017). *Athletic movement skills: Training for sports performance*. Human Kinetics.
- Magill, R. A., & Anderson, D. (2017). *Motor learning and control: Concepts and applications* (11th ed.). New York: McGraw–Hill Education.
- Negra, Y., Chaabene, H., Sammoud, S., Prieske, O., Moran, J., Ramirez–Campillo, R., Nejmaoui, A., & Granacher, U. (2020). The increased effectiveness of loaded versus unloaded plyometric jump training in improving muscle power, speed, change of direction, and kicking–distance performance in prepubertal male soccer players. *International Journal of Sports Physiology and Performance*, 15(2), 189–195. <https://doi.org/10.1123/ijsp.2018-0866>
- Kusnanik, N. W., Widiyanto, W., Bird, S. P. (2019). Effect of reactive agility training drills on speed and agility in Indonesian university students. *The Journal of Social Sciences Research, Academic Research Publishing Group*, 5(8), 1272–1275.
- Paul, D. J., Gabbett, T. J., & Nassis, G. P. (2016). Agility in team sports: Testing, training, and factors affecting performance. *Journal of Sports Medicine*, 46(3), 421–442.
<https://doi.org/10.1007/s40279-015-0428-2>

- Sheppard, J. M., & Young, W. B. (2006). Agility literature review: Classifications, training, and testing. *Journal of Sports Sciences*, 24(9), 919–932.
<https://doi.org/10.1080/02640410500457109>
- Siriworakunsak, K., & Sengsoon, P. (2021). Effects of three different programs of static and dynamic balance training on agility, stability, and balance in healthy male university students: A quasi-experimental study. *ASEAN Journal of Rehabilitation Medicine*, 32(1), 21.
Retrieved from <https://he01.tci-thaijo.org/index.php/aseanjrm/article/view/250035>
- Sporiš, G., Milanović, L., Jukić, I., Omrčen, D., & Sampedro Molinuevo, J. (2010). The effect of agility training on athletic power performance. *Kinesiology*, 42(1), 65–72. Retrieved from <https://hrcak.srce.hr/54243>
- Wang, P., Shi, C., Chen, J., Gao, X., Wang, Z., Fan, Y., & Mao, Y. (2024). Training methods and evaluation of basketball players' agility quality: A systematic review. *Heliyon*, 10(1), 1–12. <https://doi.org/10.1016/j.heliyon.2024.e24296>
- Xie, Y. P., & Zhou, H. J. (2023). Effects of compound training on motricity among basketball players. *Revista Brasileira de Medicina do Esporte*, 29(4), 1–3.
https://doi.org/10.1590/1517-8692202329012022_0599
- Young, W. B., Dawson, B., & Henry, G. J. (2015). Agility and change-of-direction speed are independent skills: Implications for training for agility in invasion sports. *International Journal of Sports Science & Coaching*, 10(1), 159–169. <https://doi.org/10.1260/1747-9541.10.1.159>