

# RESEARCH ON SPEED DEVELOPMENT EXERCISES OF FRONT KICK GROUP FOR MALE TAEKWONDO STUDENTS AT HANOI UNIVERSITY OF PHYSICAL EDUCATION AND SPORTS

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## Abstract:

Through basic research methods, the study has selected 38 exercises to develop the strength of speed of front kick group for male Taekwondo students at Hanoi University of Physical Education and Sports.

**Keywords:** Exercise, development, strength of speed, Taekwondo...

## INTRODUCTION

In fact, by observing the training sessions and competitions by male Taekwondo students at Hanoi University of Physical Education and Sports, we found that they revealed many basic weaknesses of their physical strength, especially speed one. The University has invested the actual teaching and training for the students significantly, but it has not really clearly defined the key issues that need to solve thoroughly.

So far, in Vietnam the specialized study of physical fitness and the system of exercises to develop the physical fitness for Taekwondo students has attracted the attention of many scientists. However, there has not had any research on exercises to develop strength of speed of front kick group first for male Taekwondo students at Hanoi University of Physical Education and Sports. From the above reasons, we have chosen to study the issue: “Research on speed development exercises of front kick group for male Taekwondo students at Hanoi University of Physical Education and Sports”.

## RESEARCH METHODS

The research process uses the following methods: Methods of document analysis and synthesis, interview, pedagogical observation, pedagogical examination, pedagogical experiment and statistical mathematics

## RESULTS AND DISCUSSION

### 1. Selecting exercises to develop strength of speed of front kick group for male Taekwondo students at Hanoi University of Physical Education and Sports

The selection of the exercises to develop the strength of speed of front kick group for male Taekwondo students at Hanoi University of Physical Education and Sports is carried out in the following steps: Selection through references, pedagogical observation; Selection by extensive questionnaire interview; Selection through direct talk with Taekwondo experts, coaches and instructors. As a result, we have selected 38 exercises to develop strength of speed of front kick group for the students. Exercises include:

#### Group of exercises to develop general strength of speed (13 exercises):

1. Leg wears lead 1kg, jump adam
2. Continuous jump and swing 2 legs in the sideways.
3. Continuous jump and swing leg high.
4. Fast run for 15m, jump and separate legs on sideway
5. Fast run for 15m, jump and separate legs before and after.
6. Standing high knee jump and run fast for 15m.

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7. High knee jump rope
8. High knee run in place
9. Step up and down the platform
10. Squat 20kg
11. Jump to change legs with 20kg barbells
12. Leapfrog
13. Duck walk

### **Group of exercises to develop professional strength of speed (19 exercises):**

14. Continuous back- leg front kicks (Ap chagi) to target.
15. Continuous back- leg roundhouse kicks (Dolly chagi) to target
16. Continuous double roundhouse kicks (Dolly chagi) to target.
17. Continuous back- leg axe kicks (Neyo chagi) to target.
18. Continuous double push kicks (Mirro chagi) to target.
19. Inward kick (An chagi) with stronger leg.
20. Coordination of front kick and roundhouse kick to target
21. Continuous back leg front kicks (Ap chagi) with ankle weight of 1kg lead
22. Continuous back- leg roundhouse kicks (Dolly chagi) with ankle weight of 1kg lead
23. Continuous back- leg axe kicks (Neyo chagi) with ankle weight of 1kg lead
24. Continuous back- leg sidekicks (Yob chagi) with ankle weight of 1kg lead
25. Continuous double push kicks (Mirro chagi) with ankle weight of 1kg lead
26. Continuous front kick (Ap chagi) to target by back leg with elastic band.
27. Continuous roundhouse kicks (Dolly chagi) to target by back leg with elastic band
28. Continuous axe kicks (Neyo chagi) to target by back leg with elastic band
29. Sidekicks (Yob chagi) by back leg with elastic band with 2 opposite targets 3meters apart
30. Continuous double push kicks (Neyo chagi) to target by back leg with elastic band
31. Continuous combination of two kicks to target
32. Continuous combination of three kicks to target

### **Group game exercises and competitions (06 exercises):**

33. Crab soccer
34. Duck soccer
35. Sheep jump
36. Relay hopscotch jump
37. Relay leapfrog
38. Relay duck wall

## **2. Applying selected exercises to develop strength of speed of front kick group for male Taekwondo students at Hanoi University of Physical Education and Sports**

### **2.1. Organization of experiment**

Subjects of the research are 162 male Taekwondo students of Course 43, 44 and 45 at Hanoi University of Physical Education and Sports and divided into 2 groups.

+ Group 1: Experimental group of 79 male students (course 43 consists of 18 students (1 class), course 44 consists of 36 students (2 classes) and course 45 consists of 20 students (1 class). The experimental group has the same training program with the control group; however, the physical fitness to develop the strength of speed of the front kick group is according to the system of selected exercises and the developed process of the research.

+ Group 2: The control group consists of 83 male students (course includes 36 students (2 classes), course 44 includes 17 students (1 class) and course 45 includes 30 students (2 classes). The control group practice under the training program used for Taekwondo students at Hanoi University of Physical Education and Sports.

- Experimental period: Pedagogical experiment starts from 26 August 2012 to 5 May 2013

Based on the curriculum for research subjects, we have developed an experimental process of 3 sessions per week for 9 months. The time for each training session is 90 minutes. The experimental process for specialized students of each year is presented in Appendices 1, 2 and 3.

### **2.2. Selecting tests to evaluate strength of speed of front kick group for the study subjects**

We have carried out the selection of tests to evaluate the strength of speed of front kick group for male Taekwondo students at Hanoi University of Physical Education and Sports through the following steps: Document

reference, interview, determination of the informative and reliability of the test. As a result, we have selected 6 tests including: Long stance, back- leg front kick (Ap chagi) to target for 15 seconds (times); Continuous double roundhouse kicks (Dolly chagi) to target for 15 seconds (times); Continuous double axe kicks (Neyo chagi) with ankle weight of 0.5 kg lead to target for 15 seconds (times); Sidekicks (Yob chagi) to 2 opposite targets 3meters apart for 20 seconds (times); Continuous double push kicks (Mirro chagi) to target for 15 seconds (times); Inward kick (An chagi) with stronger leg for 15 seconds (times).

**2.3. Experimental results**

Before the experiments, we have conducted the evaluation of selected tests to assess the degree of uniformity between the experimental and control groups. The results show, the results of evaluating selected tests between experimental and control groups had no difference,  $t_{\text{calculation}} < t_{\text{table}} = 2.179$  at probability

threshold  $P > 0.05$ ), proving that before experiment, the strength of speed of front kick group by the control and experimental groups are uniform. The results presented in Table 1.

After the experiment, we have evaluated the strength of speed for the research subjects. The results presented in Table 2 and Table 3.

The tables 2 and 3 show that: After 01 year of experimental study, the testing results of the strength of speed of front kick group for the second, third and fourth year students in all 06 test have  $t_{\text{calculation}} > t_{\text{table}}$  at probability threshold  $P < 0.05$ . Both the control and experimental groups have the good growth rate of the strength of speed of front kick group. However, the experimental group has higher growth rate than the control group from 1.10% to 3.51%. This proves that the selected exercises and developed processes for each school year have been highly effective in improving the strength of speed of front kick group for the students.

**Table 1. Testing results comparison of strength of speed of front kick group by experimental and control groups before experiment**

Test \ Parameter	School year	$\bar{X}_{A \pm \delta}$ (Control group)	$\bar{X}_{B \pm \delta}$ (Experimental group)	$t_{\text{calculation}}$	P
1. Long stance, back- leg front kick (Ap chagi) to target for 15 seconds (times);	The second	22.5±1.25	22.2±1.26	1.37	>0.05
	The third	24.8±1.31	24.8±1.33	1.54	>0.05
	The fourth	26.4±1.26	26.4±1.21	1.49	>0.05
2. Continuous double roundhouse kicks (Dolly chagi) to target for 15 seconds (times)	The second	35.2±2.81	35.8±2.79	1.63	>0.05
	The third	37.4±2.83	37.5±2.81	1.78	>0.05
	The fourth	39.8±2.79	37.5±2.72	1.56	>0.05
3. Continuous double axe kicks (Neyo chagi) with ankle weight of 0.5 kg lead to target for 15 seconds (times)	The second	15.9±1.01	15.5±1.03	1.35	>0.05
	The third	16.6±1.03	16.9±1.12	1.67	>0.05
	The fourth	17.7±1.23	17.4±1.08	1.89	>0.05
4. Sidekicks (Yob chagi) to 2 opposite targets 3meters apart for 20 seconds (times)	The second	18.2±1.56	18.6±1.61	1.45	>0.05
	The third	19.4±1.62	19.8±1.63	1.67	>0.05
	The fourth	20.1±1.21	20.5±1.59	1.56	>0.05
5. Continuous double push kicks (Mirro chagi) to target for 15 seconds (times)	The second	31.5±2.85	31.9±2.91	1.82	>0.05
	The third	33.3±2.61	33.6±2.85	1.81	>0.05
	The fourth	35.6±2.78	35.3±2.86	1.76	>0.05
6. Inward kick (An chagi) with stronger leg for 15 seconds (times)	The second	22.4±1.67	22.5±1.72	1.38	>0.05
	The third	23.7±1.71	23.4±1.71	1.39	>0.05
	The fourth	26.4±1.73	26.7±1.66	1.32	>0.05

**Table 2. Testing results comparison of strength of speed of front kick group by experimental and control groups after experiment**

Test	Parameter	School year	$\bar{X}_{A\pm\delta}$ (Control group)	$\bar{X}_{B\pm\delta}$ (Experimental group)	$t_{\text{calculation}}$	P
1. Long stance, back- leg front kick (Ap chagi) to target for 15 seconds (times);		The second	23.56±1.22	23.78±1.23	2.67	<0.05
		The third	25.89±1.25	26.32±1.37	2.82	<0.05
		The fourth	27.51±1.27	28.21±1.24	2.85	<0.05
2. Continuous double roundhouse kicks (Dolly chagi) to target for 15 seconds (times)		The second	36.57±2.84	37.85±2.73	2.78	<0.05
		The third	38.75±2.83	39.81±2.72	2.83	<0.05
		The fourth	41.21±2.77	42.03±2.85	2.87	<0.05
3. Continuous double axe kicks (Neyo chagi) with ankle weight of 0.5 kg lead to target for 15 seconds (times)		The second	16.53±1.05	16.69±1.06	2.79	<0.05
		The third	17.25±1.06	17.93±1.13	2.69	<0.05
		The fourth	18.47±1.22	18.56±1.11	2.68	<0.05
4. Sidekicks (Yob chagi) to 2 opposite targets 3meters apart for 20 seconds (times)		The second	18.93±1.52	19.82±1.68	2.73	<0.05
		The third	20.16±1.23	21.12±1.63	2.81	<0.05
		The fourth	21.01±1.23	21.86±1.54	2.86	<0.05
5. Continuous double push kicks (Mirro chagi) to target for 15 seconds (times)		The second	32.83±2.82	33.67±2.97	2.85	<0.05
		The third	34.51±2.66	35.37±2.85	2.68	<0.05
		The fourth	36.95±2.74	37.42±2.83	2.63	<0.05
6. Inward kick (An chagi) with stronger leg for 15 seconds (times)		The second	23.38±1.65	24.03±1.77	2.64	<0.05
		The third	24.79±1.72	24.81±1.74	2.78	<0.05
		The fourth	27.53±1.77	28.15±1.64	2.76	<0.05

**Table 3. Growth rate comparison of strength of speed of front kick group by experimental and control groups after experiment**

ParameterTest	School year	$W_{\text{control}}$ (%)	$W_{\text{experiment}}$ (%)	Difference
1. Long stance, back- leg front kick (Ap chagi) to target for 15 seconds (times);	The second	4.60	6.87	2.27
	The third	4.30	5.95	1.65
	The fourth	4.12	6.63	2.51
2. Continuous double roundhouse kicks (Dolly chagi) to target for 15 seconds (times)	The second	3.82	5.57	1.75
	The third	3.55	5.98	2.43
	The fourth	3.48	6.71	3.23
3. Continuous double axe kicks (Neyo chagi) with ankle weight of 0.5 kg lead to target for 15 seconds (times)	The second	3.89	7.39	3.51
	The third	3.84	5.91	2.07
	The fourth	4.26	6.45	2.19
4. Sidekicks (Yob chagi) to 2 opposite targets 3meters apart for 20 seconds (times)	The second	3.93	6.35	2.42
	The third	3.84	6.45	2.61
	The fourth	3.93	6.42	2.49
5. Continuous double push kicks (Mirro chagi) to target for 15 seconds (times)	The second	4.13	5.40	1.26
	The third	3.57	5.13	1.56
	The fourth	3.72	5.83	2.11
6. Inward kick (An chagi) with stronger leg for 15 seconds (times)	The second	4.28	6.58	2.30
	The third	4.50	5.85	1.35
	The fourth	4.19	5.29	1.10



**Being suitable to Vietnamese people, Taekwondo quickly developed in many schools across the country. Photo: Taekwondo Championship - national strong club**

## CONCLUSION

After a period of research, we have selected 38 exercises and developed the process. The application of the exercises to develop strength of speed of front kick group for male Taekwondo students at Hanoi University of Physical Education and Sports belongs to 03 groups: Group of exercises to develop general strength of speed (15 exercises); Group of exercises to develop professional strength of speed (23 exercises); Group game exercises and competitions (06 exercises)

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