



## ASSESSING THE EFFECTS OF SOME PROFESSIONAL PHYSICAL DEVELOPMENT EXERCISES FOR MALE STUDENTS OF VOVINAM CLUB AT FPT UNIVERSITY HO CHI MINH CITY, VIETNAM

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### Abstract:

Through selecting and applying 24 professional physical development exercises for male students of Vovinam Club at FPT University Ho Chi Minh City (HCMC) for 6 month-period, the results showed that students' professional fitness who participated in the experimental group had a remarkable growth compared to the students participated in the control group. Specifically, the average of all 7 evaluation criteria had a statistically significant difference at probability threshold  $P < 0.001$ . At the same time, through the results at the national student Vovinam tournament in 2019 (took place in Thua Thien Hue), 5 of 20 students participated in this experimental group, achieved excellent results with 5 medals of all kinds (include of 01 gold medal, 01 silver medal, 03 bronze medals). Thereby, it has contributed significantly to help FPT University HCMC rise to the rank second of Vietnam). This is an encouraging first step so that we are motivated to continue implementing new works to apply this research result into practice.

**Keywords:** development, exercises, fitness, FPT Polytechnic, students, vovinam

### 1. Introduction

Since 2008, FPT University HCMC has introduced Vovinam to teach on-campus and extra-curricular activities for students. So far, the Vovinam Club has flourished with more than 100 students participating in the practice. But in general, the teaching and training of Vovinam here is still amateur, limited in professional materials, testing equipment, training tools as well as research facilities, etc. Through observing the attendance at student competitions, we found that the Vovinam team at FPT University HCMC has

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good techniques, diverse competition tactics but is still limited in terms of physical. Therefore, it is necessary to conduct research to select a number of professional physical development exercises for male students of Vovinam Club at FPT University HCMC.

## **2. Methodology**

### **2.1. Research subject**

Subject of the study are some professional physical development exercises for male students of Vovinam Club at FPT University HCMC.

### **2.2. Research object**

The study object included 40 male students aged 18 to 22 who joined the Vovinam Club at FPT University HCMC. They will have training time over 06 months and are randomly divided into 2 groups:

- Control group: 20 male students of Vovinam Club, practicing according to the previous plan;
- Experimental group: 20 male Vovinam students practicing according to the new content and training plan.

### **2.3. Proceed**

Experimental research was conducted from June 2019 to December 2019 at FPT University HCMC.

### **2.3. Method**

Common methods used in carrying out research tasks include: Summary and analysis of relevant documents; Sociological Investigation; Pedagogical examination; Experimental pedagogy; Statistics and calculations.

## **3. Result**

### **3.1. Selecting some criterion to assess fitness for male students of Vovinam Club at FPT University HCMC**

In Vovinam martial arts, physical qualities are very important, especially physical fitness. Because, during training and competition, the competing content of this martial art must implement techniques that must be standard, accurate and beautiful such as technical strength, technical connection, rhythm gestures, aesthetics in the fist techniques ... In addition, it is always necessary to maintain the intensity at the highest level. These things require students to have good physical qualifications to achieve satisfactory results.

In order to get the criterion to assess male students' actual physical fitness status of Vovinam Club at FPT University HCMC, the topic has proceeded through the following steps:

- Step 1: Collect, making statistics and and systematizing of criterion that have been used previously to assess professional fitness in Vovinam.
- Step 2: Selecting some criterion that are suitable for practical conditions at Vovinam Club at FPT University HCMC.
- Step 3: Indirect interview by vote to consult experts and coaches to select some evaluation criterion.
- Step 4: Determining the reliability and notification of the selected criterion.

The calculation results show that all 7 indicators have more than 75% of approval, and these indicators also ensure a scientific basis with confidence between 2 times of implementation with  $r > 0.8$ . (Table 1).

**Table 1:** The results of the reliability of male students's professional fitness criterion of Vovinam Club at FPT University HCMC

Group	Criterion	r
Punchs	1. Punch with 2 hands continuously into the target for 10 seconds (number of times)	0.86
	2. Punch horizontal with 2 hands continuously into the target for 10 seconds (number of times)	0.88
Kicks	3. Strike the front leg into the target for 10 seconds (number of times)	0.84
	4. Kick the back leg into the goal 10s (number of times)	0.90
	5. Surf and kick to the side for a distance of 3m in 30 seconds (number of times)	0.83
Combinations	6. Glide and kick sideways with front leg - Kick with your hind leg into goal 30s (number of times)	0.88
	7. Kick back leg and punche straight 2 hands continuously at the target for 30 seconds (number of times)	0.85

Applying these 7 criteria to test male students's physical condition of the Vovinam Club at FPT University HCMC found that all criterion had a coefficient of variation of less than 10%. The standard deviations of the parameters were quite small compared to the average. The average error ( $\epsilon$ ) of each criterion was less than 0.05, indicating that the average value in each criterion could represent the overall average in that criterion. Therefore, the sample set was homogeneous and representative enough, so the next research steps could be carried out.

### 3.2. Selecting and applying some professional physical development exercises for male students of Vovinam Club at FPT University HCMC

Reasonable exercise selection was one of the important factors that determine the effectiveness of a training program. Determining the system of exercises, selecting specific exercises for each program depended on the specific characteristics of each sport, training objectives and training periods. Proceed as follows:

- Step 1: Collect, making statistics and systematizing of exercises that have been used to assess professional fitness in Vovinam.
- Step 2: Selecting of exercises suitable to the practical conditions of the Vovinam Club at FPT University HCMC.
- Step 3: Indirect interview by vote to consult experts.

The results have selected 24 exercises to put into practical application as follows: Supplementary exercises (7 exercises); Hand exercises (5 exercises); Leg exercises (9 exercises); Combined and continuous exercises (3 exercises). These exercises are shown in detail in Table 2.

**Table 2:** Summary of selection of applied exercises to develop professional fitness for male students of Vovinam Club at FPT University HCMC

Exercise	Encode
<b>A. Supplementary group (7 exercises)</b>	
1. 30m sprint	EXE1
2. Push up 20 times in an ascending rhythm	EXE2
3. Going like a wheelbarrow with 2 hands 10m-distance	EXE3
4. Each pair piggyback and moving 10m-distance	EXE4
5. Turning on toad style and moving 15m-distance	EXE5
6. Running up the stairs 15m-distance	EXE6
7. Jump up with raising pillows and push up 10 times	EXE7
<b>B. Group of hands fighting style (5 exercises)</b>	
8. Punch straight into the target for 30 seconds	EXE8
9. Punch 2 hands continuously into the target for 30 seconds	EXE9
10. Punch around with 2 hands continuously at the target for 30 seconds	EXE10
11. Knock freely into the air for 1 minute	EXE11
12. Punch 2 hands continuously with elastic band for 1 minute	EXE12
<b>C. Group of legs fighting style (9 exercises)</b>	
13. Stand still and kick for 30 seconds	EXE13
14. Kick horizontally with 2 legs continuously on target for 30 seconds	EXE14
15. Kick horizontally with elastic bands for 30 seconds	EXE15
16. Surf and kick sideways with front leg into the target for 30 seconds	EXE16
17. Surf and kick 2 legs to 2 sides at 3m- distance for 30 seconds	EXE17
18. Kick horizontally with front leg on target for 30 seconds	EXE18
19. Surf and kick horizontally to 2 sides at 3m-distance for 30 seconds	EXE19
20. Straight kick continuously for 30 seconds	EXE20
21. Stand still and kick 2 legs continuously at the target for 30 seconds	EXE21
<b>D. Group of combination and continuity (3 exercises)</b>	
22. Striking with the front foot - Kick with the hind foot into the target for 30 seconds	EXE22
23. Crossing with the hind foot - punching with 2 hands continuously to the target for 1 minute	EXE23
24. Back and back leg countering for 2 minutes	EXE24

### 3.3. Evaluating the effectiveness of selected exercises application to develop professional fitness for male students of Vovinam Club at FPT University HCMC

#### 3.3.1. Application organization

The selected exercises are applied to the extra-curricular training program for male students of Vovinam Club at FPT University in HCMC.

- Experimental object consists of: Control group (20 students) and experimental group (20 students) all join Vovinam Club at FPT University HCMC.
- Content of training: The control group practices exercises to develop physical fitness of Vovinam according to the current program. Meanwhile, Experimental group practiced according to the new program with 24 exercises selected by the topic.
- Experimental period of both groups lasted for 6 months (from June 2019 to December 2019).
- The training conditions for both groups are the same. Both groups have instructors (similar coach qualifications). The coaches have been trained and agreed on the plan. After each stage (before and after the experiment), the two groups conducted tests and assessments of professional fitness development indicators according to 7 professional fitness criterion that were selected by the topic.

#### 3.3.2. Initial fitness level between experimental group and control group of male students of Vovinam Club at FPT University HCMC

**Table 3:** Comparison of initial fitness level between students of experimental group (n = 20) and control group (n = 20) joining Vovinam Club at FPT University HCMC

Criterion	The experimental group			The control group			Comparison	
	$\bar{x}_{Exp}$	$\pm S_{Exp}$	Cv	$\bar{x}_{Con}$	$\pm S_{Con}$	Cv	t	P
1. Punch with 2 hands continuously into the target for 10 seconds (number of times)	27.5	2.19	7.96	27.7	2.22	8.01	0.40	>0.05
2. Punch horizontal with 2 hands continuously into the target for 10 seconds (number of times)	26.3	2.11	8.02	26.5	2.09	7.89	0.42	>0.05
3. Strike the front leg into the target for 10 seconds (number of times)	10.6	0.87	8.21	10.4	0.89	8.56	1.01	>0.05
4. Kick the back leg into the goal 10s (number of times)	17.7	1.25	7.06	17.7	1.22	6.89	0.72	>0.05
5. Surf and kick to the side for a distance of 3m in 30 seconds (number of times)	12.4	0.86	6.94	12.2	0.88	7.21	1.02	>0.05
6. Glide and kick sideways with front leg - Kick with your hind leg into goal 30s (number of times)	13.5	1.12	8.30	13.3	1.14	8.57	0.79	>0.05
7. Kick back leg and punche straight 2 hands continuously at the target for 30 seconds (number of times)	11.5	0.98	8.52	11.7	0.96	8.21	0.92	>0.05

(Note:  $t_{0.05} = 2.021$ )

As shown in Table 3, all 7 professional fitness criteria of the control and experimental groups had indicators  $t$  calculated  $< t$  table, at probability threshold  $P > 0.05$ , the difference of mean values is not significant. It confirmed that the professional fitness level of the control group and the experimental group before applying a number of specialized physical development exercises were similar.

### 3.3.3. Physical fitness after application of professional physical development exercises between students of 2 experimental and control groups Vovinam Club at FPT University HCMC

The research results showed that, through the training process, the physical fitness indicators of the two groups had developed rather well. But in the experimental group, there was a clearer development than that of the control group. In particular, all 7 professional fitness criteria of the 2 groups had a statistically significant difference at the probability threshold  $P < 0.001$  that dominant advantage in favor of the experimental group. The results were presented in detail in Table 4.

**Table 4:** Comparison of fitness level after experiment period between students of experimental group ( $n = 20$ ) and control group ( $n = 20$ ) participating in Vovinam Club at FPT University HCMC

Criterion	The experimental group			The control group			Comparison	
	$\bar{x}_{Exp}$	$\pm S_{Exp}$	Cv	$\bar{x}_{Con}$	$\pm S_{Con}$	Cv	t	P
1. Punch with 2 hands continuously into the target for 10 seconds (number of times)	31.8	2.08	6.54	29.5	2.15	7.29	4.86	<0.001
2. Punch horizontal with 2 hands continuously into the target for 10 seconds (number of times)	31.5	2.02	6.41	29.2	1.98	6.78	5.14	<0.001
3. Strike the front leg into the target for 10 seconds (number of times)	12.7	0.85	6.69	11.5	0.86	7.48	6.27	<0.001
4. Kick the back leg into the goal 10s (number of times)	19.8	1.15	5.81	18.5	1.25	6.76	4.84	<0.001
5. Surf and kick to the side for a distance of 3m in 30 seconds (number of times)	13.6	0.87	6.40	12.7	0.85	6.69	4.68	<0.001
6. Glide and kick sideways with front leg - Kick with your hind leg into goal 30s (number of times)	15.9	1.06	6.67	14.5	1.17	8.07	5.60	<0.001
7. Kick back leg and punche straight 2 hands continuously at the target for 30 seconds (number of times)	14.3	0.91	6.36	12.6	0.94	7.46	8.21	<0.001

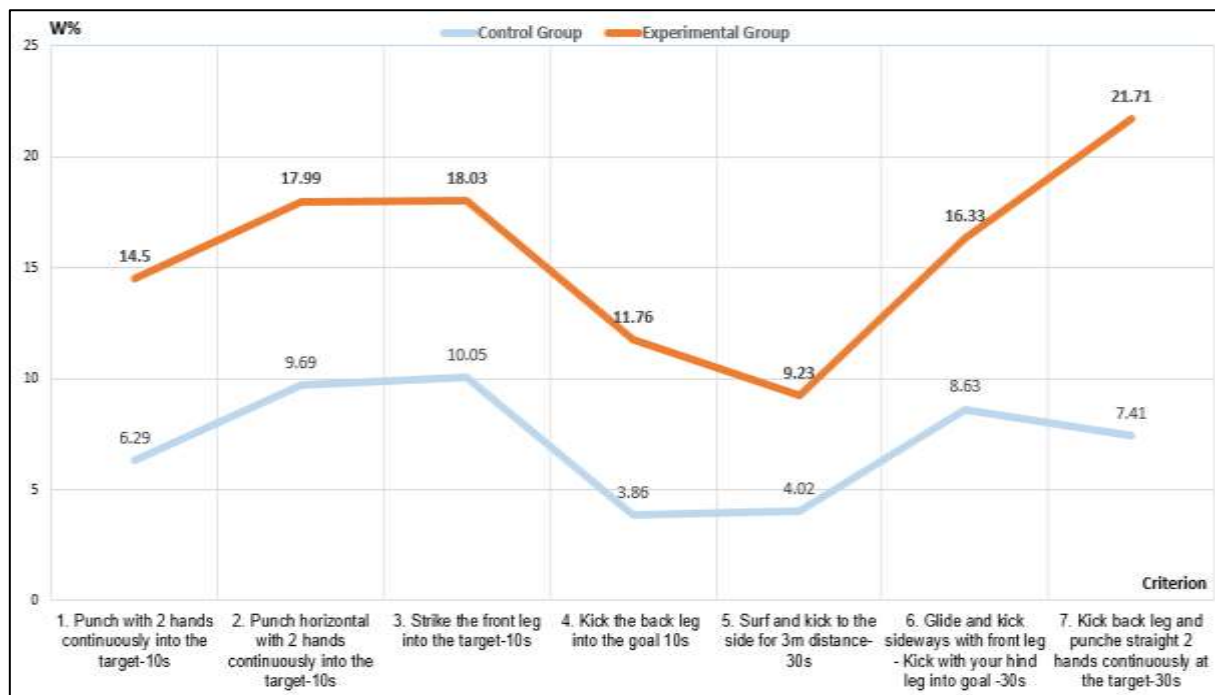
(Note:  $t_{0.001} = 3.551$ )

This is more evident when comparing the growth rate between the experimental groups and the control group after the time of application of the selected physical exercises.

In general, after 6 months of practicing physical exercises, the control group has developed at all indicators and the average value of 5 out of 7 surveyed indicators had

statistical significance at probability threshold  $P < 0.05$  (due to  $t_{\text{calculated}} > t_{0.05} = 2.093$ ). But the control group's indicators of professional physical growth of was not high ( $W\% = 3.86 \sim 10.05$ ). Meanwhile, the students of the experimental group had a remarkable increase in physical strength after applying the selected exercises ( $W\% = 9.23 \sim 21.71$ ) compared to the control group's.

Thus, it can be affirmed that 24 exercises to develop professional fitness selected by the topic to apply in practice have brought about positive results for practitioners.



**Figure 1:** Comparison of growth rate between experimental and control groups after the time of applying physical exercises

#### 4. Conclusion

Vovinam training activities at FPT University HCMC have developed strongly in number. But in general, the teaching and coaching of Vovinam extracurricular activities here was still inadequate and limited (especially in terms of physical strength), need consideration for improvement.

Through the study, the topic has selected 7 indicators to assess professional fitness and 24 exercises to develop professional fitness (including: 7 supplementary exercises, 5 hand exercises, 9 leg exercises and 3 combined and continuous exercises) for application and testing.

From 24 selected exercises, we have developed a 6 months-application plan to assess the change of professional fitness for students. At the same time, this was also a prerequisite step to participate in the national student Vovinam - 2019. Test results after 6 months of training have shown a clear effect of these exercises. This has been shown remarkable by experimental group's growth of the professional fitness criterion.

In addition, the effectiveness of these exercises was also represented in the results of the national student Vovinam tournament in 2019. Specifically, 5 of the 20 students of the experimental group participated in the tournament and succeeded impressively. The number of medals (including: 01 gold medal, 01 bronze medal, and 03 bronze medal) has proved convincingly and contributed significantly to helping FPT University ranked second nationwide.

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