

# Developing measures to improve physical strength for the first year male students of the University of Fire

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**Abstract-** As matter in fact, firefighters (FFP soldiers) must carry out fire fighting and rescuing operations in fires that last for many hours in high temperature environment. That requires firefighters to have a supple strength, agility and high speed in their work to handle situations the most quickly, efficiently and safely. Therefore, even from the study time at university, physical education for students of the University of Fire (UOF) is especially paid kind attention in order to improve the quality of students when participating in specialized subjects of fire fighting and rescuing in the university as well as after graduation from university and accepting work at their localities.

**Index Terms-** Physical education, University of fire, people's public security, firefighters.

## I. INTRODUCTION

Although physical education (PE) has been a compulsory main subject in the curriculum of all levels and majors, so far, in some places, this work has not met the requirements on some aspects such as: facilities still have many shortcomings, the quality is not satisfactory, the contingent of teachers and cadre still has a lot of limitations... Noticing this situation clearly, our Party and State have promulgated some solutions for PE at all universities/ educational institutions, all levels, which is shown in Directive 36 of the Party Central Committee: " Efficiency of PE at universities and educational institutions is still low, so the two sectors of Education - Training and Sports have to coordinate in the direction of improving the curriculum, physical training standards, training teachers of PE for schools at all levels, creating necessary conditions about facilities for implementing PE regime at all schools ”.

Physical education in schools at all levels becomes an inseparable incorporated part of comprehensive education for the young generation, and it is an effective means of harmonious development about body, improvement of health, fitness and intelligence, making contribution to training new people to develop comprehensively, effectively serving the cause of Fatherland construction and defence.

The Ministry of Education and Training (MOET) has issued the physical education programme in universities under the Decision No.: 3244 / QD-TD TT dated September 12, 1995 [1]. The content of the programme is generalized as follows: The content of the PE programme in universities is specifically allocated as presented in table 1

**Table 1:** Content and learning time of PE provided by the MOET

<i>No.</i>	<i>Content</i>	<i>Total hours</i>	<i>Academic year</i>			
			<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>
1.	Reasoning	14	8	6		
2.	Practicing	136				
	- Exercise	32	16	16		
	- Athletics	48	20	16	12	
	- Optional subjects	56	16	22	18	
	Sum	150	60	60	30	0
3.	Extracurricular activities	320	60	60	100	100
Total		470	120	120	130	100

Along with the regular PE class hours, extracurricular sports play an important role in improving health, fitness, educating the will, personality and qualities for learners and students. Extracurricular sports are also a favourable and potential environment to detect and foster sports talents for the nation. In the context of global integration as at present, extracurricular sports has more and more positive meaning in the community aspect, directing the younger generation into healthy sports activities, avoiding from social evils. Therefore, researching extracurricular sports activities in the schools in our country is carried out to become a general development base for the sports movement of the national students is essential.

After more than 10 years of performing university training duties, on December 19th, 2008, the Prime Minister signed the Document No. 1959/ TTg-KG, assigning the University of Fire the task of university qualification training about fire fighting and prevention for non-police subjects and UOF is also the first university of the Ministry of Public Security to implement the training policy according to social needs. Then, on October 27, 2010, the Minister of Education and Training signed the Decision No. 4854/QD-BGDĐT to assign the task of training master majoring in organizing fire fighting and prevention to the University of Fire. In 2017, the UOF was assigned the task of training the doctoral degree majoring in organization of FFP. This is an important milestone marking the maturity of the UOF in the training of FFP staff [2-6].

For over 40 years of building and development, the contingent of the UOF cadre and teachers have grown in both quantity and quality, meeting the training requirements and tasks in each period.

In order to match the physical development of current students and learners. Ministry of Education and Training issued Decision No. 53/2008 QD - BGD & ĐT, dated September 18, 2008, providing the assessment and classification of the physical fitness

of pupils and students (male and female) from 6 to 20 years old. The decision includes 6 contents: Squeezing force of preferred hand (kg); Laying on back and bending belly (times/ 30s); jumping away on the spot (cm); 30-metre running with high start (seconds); optional running according to personal strength for 5 minutes (m); 4 x 10m shuttling running (s). At the end of the academic year, each student is checked and evaluated at least 4/6 contents in which jumping away and optional running according to the strength are compulsory.

## II. RESULTS AND DISCUSSION

For the first year students, among 60 students in the content of jumping away there are 21 students who met the requirement accounted for 35%, in the content of 100-m running there are 23 students who met the requirement accounted for 38.3%, in the content of shrinking hands with single bar, there are 25 students who met the requirement accounted for 41.6%, in the content of the average 1500-m distance running there are 25 students who met the requirement accounted for 41.6%. For the second year students, among 60 students in the content of jumping away there are 25 students who met the requirement accounted for 41.6%, in the content of 100-m running there are 28 students who met the requirement accounted for 46.6%, in the content of shrinking hands with single bar, there are 28 students who met the requirement accounted for 46.6%, in the content of the average 1500-m distance running there are 30 students who met the requirement accounted for 50%.

**Table 2.** Current status of the average value of male students D31, D32

Order	Test content	D31 (n = 60)	D32 (n = 60)
1	Jumping away on the spot	228,7 ± 14,1	231,2 ± 15,4
2	100-m distance running	15,1 ± 0,6	15 ± 0,5
3	Shrinking hand with single bar	11,7 ± 1,9	11,5 ± 1,8
4	Average 1500-metre distance running	432,5 ± 48,7	425,8 ± 46,9

For the first year students, their fitness is still weak, through 4 tests, the number of students, who have achieved the target of the fitness assessment, accounted for only from 35% - 42%. The reason for the weak fitness of the first year male students is that at high school, they only focus on learning cultural subjects while the subjects of PE are not focused properly. For the second year students, their fitness may be better because they are entitled to study PE in the first year and often practice when entering university through extracurricular sports. We found out that the satisfactory level of male sophomore is from 42% to 50%. Through the test and comparing the fitness of first-year and second-year male students, we recognized that the students' fitness is still weak, especially for the first-year students. One of the reasons for the weak fitness is that there are no suitable physical exercises, so it is imperative to choose appropriate exercises to develop physical strength.

### 2.1 Development of agility:

In the process of developing agility, the movement is necessary to improve the functional abilities of the body, so these abilities determine the speed characteristics for the advocacy activities subject to the sports specialization aspect, then preparing stamina of students is slower.

In practice, it is found out that agility is often expressed in synthetic way. For example, the short distance run depends on the advocacy reaction time , the single movement speed (rear pedalling, thigh shifting) and step frequency. In the movements with complex coordination , speed not only depends on agility, but also is impacted by many other factors. For example: Run raising thighs, 30-m distance running high speed, 30-metre distance running at convertible speed with fast 30-m running - slow 30-m running...



**Figure 1.** Run raising thighs

## 2.2 Developing strength:

Strength training is to stimulate the positivity of substances, organ systems and the whole body.

Thanks to the strength, human movement coordination ability can be perfected. The developed strength is the basis for forming other physical qualities. The common task in many years of the strength training process is to develop comprehensively and ensure the ability to promote strength in different advocacy forms of operation and movement. For example: Jumping up like a toad's jumping, continuous jumping on sandpit, laying on belly pushing body up and down, jumping away on the spot...



**Figure 2.** Jumping up like a toad's jumping



**Figure 3.** Continuous jumping on sandpit

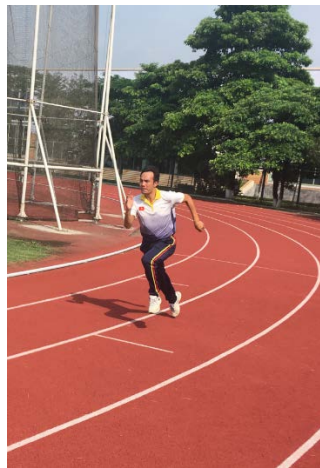


**Figure 4.** Laying on belly pushing body up and down

### 2.3 Supple strength development:

Strength is an important physical quality to develop a comprehensive fitness for students. The main measure/ solution to develop students' strength is to run with exertion for a long time. This exercise is intended to improve the working ability of the body organ systems to ensure to have endurance in learning and working.

Improving the strength is actually a process that makes the body adapt gradually to a more and more increasing amount of movement. This on the one hand requires the practitioner to have a patient will, to endure the feelings of fatigue, sometimes very hard and boring feelings due to the monotony of the exercise. On the other hand, it requires a gradual and continuous accumulation of adaptation for many years. The impulsive intentions, coercion, and burning of the stage not only bring about no results but also harm the practitioner.



*Figure 5.* 800-metre distance running

### 2.4 Skilful quality (ability of advocacy coordination)

Educating skilful ability for students has a lot of exercises namely jumping, balancing, throwing, catching, high coordination exercises. In addition, there are also exercises performed in complex conditions (running overcoming obstacles) the ball subjects and fitness subjects are effective means for developing skilful ability.

The main method to develop advocacy coordination skills is: Doing regularly physical exercises with the changes in texture, difficulty levels, speed, rhythm of exercises, training the ability to feel space and time. Diversifying the ways of performing movement when changing external conditions and changing the way of receiving information.



*Figure 6.* Run through the pile

### 2.5 Flexible quality.

Flexible capacity is one of the prerequisites for athletes to achieve high achievements in the intensive sports. Flexibility is the ability to perform movements with large amplitude, and maximum amplitude of movement is a measure of flexibility. The main method for developing flexible capacities is to stretch muscles and ligaments. For example: Bending deeply body from a high platform, sitting stretching straight legs towards 2 sides with deeper bent body, Standing putting a leg on the high podium, bending over body maximally



*Figure 7.* Bending deeply body from a high platform



**Figure 8.** Sitting stretching straight legs towards 2 sides with deeper bent body



**Figure 9.** Standing putting a leg on the high podium, bending over body maximally

### III. CONCLUSION

Through the research, the thesis has selected a number of solutions/ measures to develop the qualities aiming at developing physical strength for the first year male students of the UOF under 5 groups of subjects: Group of agility development exercises; group of strength development exercises; group of endurance development exercises; group of skilful ability development exercises and group of flexible skills development exercises.

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