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Selecting exercises to improve the speed strength of basketball for students of the Physical Education Department of Hong Duc University

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Abstract
Basketball is an important module (credit) in Physical Education (P.E) of the current training program at pedagogical universities and colleges, especially in Speed Strength Basketball. Among the top factors, it determines whether to win or lose in each specific situation. However, to develop the power to a reasonable speed is a matter that needs to be considered very carefully. Therefore, choosing appropriate exercises to develop speed strength for students of the Faculty of Physical Education of Hong Duc University is very necessary, thereby contributing to improving the quality of training.

Keywords: Credits, basketball, Skill, high speed power

1. Introduction

Basketball is a sport that tends to modernize, plays at a high pace, fast speed, takes place for a long time, so athletes must have fast, strong, accurate, supple movements, ccreativity, which requires that activities be permanent throughout the match. Therefore, in practice and competition, it is necessary to use many technical factors (TF). Today, along with the strong development of science and technology, training methods, means as well as modern equipment have gradually been widely used, especially in developed countries, bringing faster, more accurate and comprehensive results, using appropriate teaching facilities and methods to develop the power of speed for students playing basketball are very essential. But the most basic is the need for *high speed power*, to move flexibly and decide when to achieve high efficiency, this is the basic element that needs to be trained into skills. Reality shows that, especially in Basketball, speed power is one of the top factors, it determines whether to win or lose in each specific situation. In the process of learning and training, speed power is also essential to perfecting skillful tactics. Therefore, it is necessary to know how to coordinate professional movements into skillful techniques (high levelled). In competition, it is necessary to practice to the level of automation and must know the rhythmic combination between movement of the legs and the movements of the hand in each position, in the reasonable time will bring about high learning and competition results. In order to ensure that students meet the learning tasks in general, in particular Basketball in pedagogical universities should have a reasonable and highly scientific system. So, for Basketball, we have researched and selected a number of basic exercises to teach and practice to support the techniques with high-speed movement in Basketball, helping students to learn and practise with good results. Through the teaching process at the university, the teacher directly instructs Basketball, observing the practice and competition of students. We found that the speed power level of the students was still low. This is clearly shown in the mobility in practice and competition, so that leads to the limited ability to coordinate in competition situations as well as in performing techniques. Especially it was evident at the end of a training session or a match. Selecting tests to evaluate the power of speed to improve the learning quality of Basketball for students of Faculty of Financial Education of Hong Duc University. In order to have a theoretical and practical basis in the selection of basic exercises that support the power of speed to improve the quality of training in Basketball, in August of the 2018-2019 school year, we surveyed 30 instructors: 10 instructors of Physical Education Department of Hong Duc University; 10 instructors teaching

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at Thanh Hoa University of Culture - Sports and Tourism, 10 experts from the basketball team in Thanh Hoa city (through questionnaires) on selecting speed strength assessment

exercises to improve high-quality learning in Basketball. The survey results are as follows (see table 1).

Table 1: Results of interviews on selecting basketball speed strength assessment exercises for students of the Faculty of Physical Education, Hong Duc University. (n = 30)

Exercises	Agreement of selecting	Percentage
Leading the ball at 20m/s	28	93.3
Continuous push-ups for 20 seconds (number of shots)	24	80.0
Shuttle running (s)	27	90.0
Vertical jumping in place (cm)	26	86.6
Continuous jumping high for a field goal at 3 points in 20 seconds (number of shots for the basket)	27	90.0

Table 1 shows that all 05 exercises on which we interviewed are of over 80%. Therefore, we use these 05 exercises in training to evaluate the strength of speed for students of Falculty of Physical Education, Hong Duc University; 1) Leading the ball at 20m/s; 2) Continuous push-ups for 20 seconds (number of attempts); 3) shuttle running (s); 4) Vertical jumping in place (cm); 5) Continuous jumping high for a field goal at 3 points in 20 seconds (number of shots for the basket).

2. Results
2.1 Evaluate the effectiveness of the selected exercises in

the basketball training process for students of the Faculty of Physical Education, Hong Duc University
In order to have a basis for evaluating how the above - mentioned tests have a positive impact on speed strength, we use the 5/30 tests selected above to evaluate the effectiveness of the exercise system in 6 months with 42 weeks. We conduct the experiments with 30 students of Hong Duc University, the academic year 2019-2020. The experiment was carried out in two groups: experimental and control, each group of 15 students, conducted assessment in 2 phases. (see table 2).

Table 2: Comparison of results of the basketball speed strength test between 2 groups before the experiment (n = 30)

Exercises	Experimental Group	Control Group	$\pm \sigma_c$	T	P
Leading the ball at 20m/s	3.4,1. (s)	3.4,3.(s)	0.007	0.685	
Continuous push-ups for 20 seconds (number of shots)	16.5	16.3	1.562	0.489	
Shuttle running (s)	27.4	27.6	2.516	0.257	<0.05
Vertical jumping in place (cm)	66.2	66.3	21.89	0.043	
Continuous jumping high for a field goal at 3 points in 20 seconds (number of shots for the basket)	6.17	5.92	1.129	0.576	

Table 2 shows that: the results of comparing the mean values of the 2 sets through t - student index to evaluate the difference in speed strength of experimental and control groups. The benchmark index with n = 12; probability P = 0.05 and t – table = 2.17. In the case of the value of t-calculation is less than the value in t- table above. This proves that the difference between the experimental group and the control group is not significant. Comparing the average value of the 05 tests to evaluate the strength of speed, we find that all 05 tests have the value of t-caculuion < t-table = 2.179. Thus, it proves that the speed strength level between the experimental and the control group is relatively equal before the experiment.

2.2 Training measures of research
After grouping, we conducted the experiment for both the control group and experimental group with the same number of hours, progress of conducting in the program, the unversity's progress of conduction. One session per week, each session we spend 20-25 minutes to develop speed strength. Strength training sessions are performed at the beginning of the basic part of the lesson plan (when the

fitness is still full).
Thus, the two speed strength training groups differ only in that the selection and use of the speed strength development exercise system. Experimental group using the speed strength development exercise system we have researched and selected, each lesson plan can use from 3 to 5 speed strength development exercises. The control group uses common exercises according to the curriculum and according to specified time, conditions such as training equipment, yard, natural conditions, are relatively uniform. After the 3-month experimental period, we used 05 tests as initial test to evaluate the difference in strength level of the two groups (experimental and control), data obtained after the test was processed according to 2 way:
1. Calculate the rate of growth
2. Compare 2 means between experimental and control groups.

Results of calculating growth rate of indexes evaluating speed strength of the two groups were obtained after 3 months (see table 3).

Table 3: Comparison of strength growth rates of experimental and control groups after 3 months (nA = nB = 15)

Exercises	W Experimental group (%)	W Control group (%)
Leading the ball at 20m/s	6.818	2.870
Continuous push-ups for 20 seconds (number of shots)	7.810	3.698
Shuttle running (s)	6.109	2.007
Vertical jumping in place (cm)	6.404	2.607
Continuous jumping high for a field goal at 3 points in 20 seconds (number of shots for the basket)	9.744	6.744

Through table 3 we see that after 3 months of practice, both the experimental and the control groups have relatively good growth rates. This means that the value of the indexes have good growth. However, the experimental group's growth was greater than the control group shown in the table above.

To clarify the differences of the two groups in terms of speed strength, we compare 2 means of the experimental and control groups (see Table 4).

Table 4: Comparison of speed strength test results between 2 groups: experimental and control after 3 months of experiment: (nA = nB = 15)

Exercises	Experimental Group $\overline{X_A}$	Control Group $\overline{X_B}$	$\pm\ \sigma_c$	t	p
Leading the ball at 20m/s	3.34	3.40	0.012	2.620	
Continuous push-ups for 20 seconds (number of shots)	20.5	17.9	2.295	2.559	
Shuttle running (s)	22.2	23.63	1.302	3.058	<0.05
Vertical jumping in place (cm)	72.7	68	14.13	3.040	
Continuous jumping high for a field goal at 3 points in 20 seconds (number of shots for the basket)	7.92	6.33	1.779	2.907	

Table 4 shows that: All 05 tests have t-table > t- calculation = 2.17 at threshold *P*< 0.05. However, the indexes compared to t - table are not high, in detail, the lowest level is 2,620 and the highest level is 3,058, so the experiment continues to be conducted in phase II.

Phase 2 was also conducted experimentally in the time of 3 months. Experimental methods do not change much compared with phase I. The results obtained we also treat the same as phase I. Growth rate of the obtained strength growth, (see table 5).

Table 5: Growth rate of strength speed strenth of 2 experimental and control groups after 6 months of experiment: (nA = nB = 15)

Exercises	Experimental Group (%)	Control Group (%)
Leading the ball at 20m/s	12.688	8.592
Continuous push-ups for 20 seconds (number of shots)	22.496	12.565
Shuttle running (s)	26.731	14.033
Vertical jumping in place (cm)	16.303	9.405
Continuous jumping high for a field goal at 3 points in 20 seconds (number of shots for the basket)	46.823	21.186

Through Table 5 we can easily see: after 6 months of experiment, the experimental group's indexes had a higher growth rate from 12,688 to 46,823 compared to the control group. To be able to clearly see the difference in the effectiveness of the two ways of choosing and using the strength development exercise system for students. We processed the results after 6 months of experimentation by comparing 2 means (see Table 6).

Table 6: Comparison of the speed strength test results after the real 6 months between 2 experimental groups and control: (nA = nB = 15)

Exercises	Experimental Group $\overline{X_A}$	Control Group $\overline{X_B}$	$\pm\ \sigma_c$	t	p
Leading the ball at 20m/s	3.10	3.23	0.001	8.954	
Continuous push-ups for 20 seconds (number of shots)	23.6	20.58	2.258	5.433	
Shuttle running (s)	21.01	23.34	1.120	9.873	<0.05
Vertical jumping in place (cm)	80.07	72.5	6.983	7.569	
Continuous jumping high for a field goal at 3 points in 20 seconds (number of shots for the basket)	10.2	7.83	1.066	5.533	

Table 6 shows that: the indexes have t- table > t-calculation at threshold *P*<0.05. In other words, the exercise system that we have selected and applied in speed strength training and training for the experimental group has proved effective in improving speed strength qualities for research subjects.

3. Conclusion
Thus, after the experiment with 05 tests, we chose the exercises and confirmed to have a clear effect on the training results, in order to develop the power of speed for the students of the Faculty of PE of Hong Duc University. The students obtained the good results, therefore, it is suggested to increase the use of basketball credits in Pedagogical universities in general, the Faculty of PE of Hong Duc University in particular. However, the implementation of these innovations needs a balance between the complementary exercises specified in the training program to suit specific subjects and conditions of training grounds, tools, weather.

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