Application of “basketfast ground” technology in improving basketball players’ agility in changing directions

Khudoynazarov Navruzjon Bakhodirovich[1]

[1]Uzbekistan state university of physical education and sport, Chirchik, Uzbekistan

Abstract

This article presents information on the “Basketfast ground” technology and the developed set of exercises, which effectively contribute to improving the agility of student basketball players in changing directions, as well as the development of their physical qualities and physical fitness. Additionally, the results obtained before and after the study in the control and experimental groups are presented, and necessary recommendations for those involved in basketball are developed.

Purpose: To develop speed of movement in variable directions for student basketball players through a set of exercises developed using innovative technology.

Tasks: To analyze and synthesize literature materials within the scope of the topic;

- To utilize "basketfast ground" technology in the training process;
- To develop physical qualities and preparedness of students through the developed set of exercises;

Keywords: basketball players, changing directions, movement, speed, improvement, Basketfast ground, technology

Introduction

The necessity to achieve maximum results in basketball competitions, which are becoming increasingly popular worldwide, is leading to an intensification of competition between teams year after year. This trend calls for improving the effectiveness of technical and tactical training in this sport, especially the development of agility in changing directions. From sources published to date, it is known that in modern basketball, the effectiveness of technical and tactical actions that ensure game performance depends on the players' speed abilities. There is a need to apply methods and innovative technologies aimed at forming and purposefully developing such abilities during the training process.

The results of scientific research conducted worldwide on training highly qualified basketball players and their analysis focus on developing methods and means for teaching and improving technical and tactical skills in long-term training cycles, developing all physical qualities, forming psychofunctional capabilities, and enhancing coordination abilities. Although control and assessment tests have been created for developing all physical qualities (strength, speed, agility, endurance, flexibility), along with model indicators and regulatory requirement criteria used as benchmarks in the process of training basketball players, the lack of innovative technologies and equipment for developing basketball players' speed of movement in changing directions necessitates the development of modern methods, equipment, and innovative technologies.

This research work serves, to a certain extent, in implementing the tasks specified in the Decree of the President of the Republic of Uzbekistan No. UP-5924 dated June 24, 2020 “On measures for further improvement and popularization of physical education and sports in the Republic of Uzbekistan,” Decree No. UP-60 dated January 28, 2022 “On the development strategy of New Uzbekistan for 2022-2026,” the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 65 dated January 29, 2019 “On the wide promotion of a healthy lifestyle and engagement of the population in physical education and mass sports in Uzbekistan,” as well as other relevant regulatory legal documents in this field.

Methods

The study employed analysis of scientific and methodological literature, pedagogical observation, pedagogical control, pedagogical tests, and pedagogical experiment.

Results and discussion

It is important that the methods chosen for developing speed inherent to basketball players, especially for improving running speed in variable directions, incorporate technical and tactical elements in the structure of the exercises. During the implementation of these exercises, attention should be paid to running technique, speed, and the quality of the elements. Special consideration should be

Table 2. "Basketfast ground" - a complex of exercises that develops the speed of basketball players and their speed in changing directions using innovative technology

No	Exercise name	Execution order	Exercise rate
1.	"Digital route from the center"	- The athlete stands in the center The coach calls out random numbers (e.g., 3-8-5) In this technology, numbers are arranged in a mixed order, not sequentially The player needs to find these numbers and bounce the ball 3 times on top of each number	6-8 times
2.	"Decoding the Digital Top"	- The coach presents a problem, the player understands the direction and thinks analytically by solving the problem For example, the coach says (2*3), the answer is 6, so the player finds it, jumps over the number 6 completely and quickly returns to their place	6-8 times
3.	"Stop signal run in sequence of numbers"	Numbers are pronounced sequentially. 4 numbers (for example, 3-6-8-9), the athlete memorizes the numbers, jumps from the center one by one to each number, jumps back to the center, jumps again to the next number, jumps back to the center, but when the coach gives a STOP signal, the athlete stops the movement and continues after the coach's GO signal.	6-8 times
4.	"Circle Run"	In this exercise, the athlete bounces the ball on the ground. At the coach's signal, the athlete runs quickly around the numbered markers 1 or 3 times, bouncing the ball every 3 steps, goes to a cone 5 meters away, and returns to the starting point.	6-8 times
5.	"T-shaped running"	The exercise area has T-shaped lines, with the starting point at the bottom of the T-shape. At the coach's signal, the athlete runs quickly to the middle of the T-shaped line, then runs to the left with a sideways movement, then to the right with a sideways movement, and then back to the middle, running backwards to the starting point.	6-8 times
6.	"Figure-8 run"	In this exercise, there are lines drawn in the shape of the number 8. The center is both the starting and ending point for the athletes. They quickly start running along these lines at the coach's signal	8-10 times
7.	"Wave Running"	The technique involves wavy lines on the edge, along which the athlete bounces the ball while running at high speed	8-10 times
8.	"Adding Circular Movement in Between"	The athlete stands at the center of the designated area with a ball in hand. Upon the coach's signal, the athlete begins to move (run) along figure-8 shaped lines, rotating once to the right and once to the left every 4 steps.	8-10 times

Table 2. Evaluation criteria

Score	Description
5 points	The exercises were performed very quickly, accurately, and in a coordinated manner, without errors. The rhythm of movements fully suits high-level athletes
4 points	The exercises were performed quickly and almost accurately. There are minor coordination errors, but they don't affect the overall result
3 points	The exercises were performed at medium speed with slight slowness or lack of accuracy. The movements are slightly inconsistent, but the exercise was completed.
2 points	The exercises were performed slowly, with many accuracy and coordination errors. Difficulties in changing direction were observed.
1 point	Exercises were not fully performed or were performed very slowly, with loss of coordination and disrupted movement patterns

given to the constant use of aerobic-anaerobic exercises for the effective development of movement (running) speed in changing directions using exercises of this category.

To improve the speed of movement of basketball students in variable directions, a

Fig 2. Analytical approach to the study of early victories in sambo using throws over the last 5 years at the World Championships

N	Test	Control group		Difference	Experimental group		Difference
		B/E	A/E		B/E	A/E	
1.	"Digital direction from the center"	3.8	4.0	0.2	3.5	4.6	1.1
2.	"Find the digital cipher"	3.3	3.8	0.5	3.3	4.4	1.1
3.	"Running with stop signals in numerical sequence"	3.1	3.9	0.8	3.5	5.0	1.5
4.	"Circular running"	3.2	3.7	0.5	4.2	4.8	0.6
5.	"T-shaped running"	4.0	4.3	0.3	3.3	4.4	1.1
6.	"Figure-8 running"	3.3	3.5	0.2	3.3	4.5	1.2
7.	"Wave running"	4.2	4.5	0.3	4.0	4.9	0.9
8.	"Adding circular movement in between"	3.6	3.9	0.3	4.2	4.9	0.7
9.	x	3.5	4	0.38	3.6	4.6	1.0

special training complex was developed using the innovative technology "basketfast ground," which is presented in Table 1 below.

It is important that the methods chosen for developing speed inherent to basketball players, especially for improving running speed in variable directions, incorporate technical and tactical elements in the structure of the exercises. During the implementation of these exercises, attention should be paid to running technique, speed, and the quality of the elements. Special consideration should be given to the constant use of aerobic-anaerobic exercises for the effective development of movement (running) speed in changing directions using exercises of this category.

To improve the speed of movement of basketball students in variable directions, a special training complex was developed using the innovative technology "basketfast ground," which is presented in Table 1 below.

As can be seen, the "Basketfast ground" technology was used to improve the speed of movement of our basketball student-athletes in changing directions, as well as to develop their physical qualities and overall physical fitness. The results before using this technology in the experimental and control groups are presented in Table 3 above. The post-study results for these groups are also provided. Moreover, when analyzing the pre- and post-study results in the experimental and control groups, it became clear that with the use of the innovative "Basketfast ground" technology, the athletes' speed of movement in changing directions, physical qualities, and overall physical fitness increased significantly.

A set of exercises has been developed for our innovative technology, designed to improve the physical qualities, physical fitness, and primarily, the speed of movement in changing directions for basketball students. This developed set of exercises can be used in lessons and extracurricular activities. Table 2 presents the evaluation criteria in points, and Table 3 shows the differences between the results before and after the experiment.

Conclusion

In modern sports games, particularly in

today's basketball practice, it is advisable to use a set of exercises developed with innovative technologies that correspond to speed components, especially for rapidly changing directions, along with all general physical qualities (strength, speed, endurance, agility, flexibility). This approach is beneficial for purposefully organizing long-term sports training, increasing the effectiveness of technical and tactical methods, and enhancing competitive performance.

This is also evidenced in Table 3 above. It should be noted that in the modern world, conducting training sessions using innovative technologies, both during regular classes and extracurricular activities, shows quite effective results in developing athletes' physical fitness.

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AUTHOR BIOGRAPHY:



Navruzjon Bakhodirovich KHUDOYNAZAROV

Employment
Student of PhD at Uzbekistan state university of physical education and sports

Degree
MD

Research interests
Basketball, physical education and sport, Theory of physical education, Analyzing of sport competitions

E-mail: