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The development of coordination abilities in basketball lessons by applying the game approach

Abstract: In literature on sports most authors define agility as a human motor quality and as a function of the degree of development of other motor qualities. The relationship of agility to other motor qualities as well as to motor habits is undeniable. Swiftiness, precision and sparingness by means of which complex coordination motor actions are mastered and performed are the concrete measurements of agility as a motor quality; they are also characteristic of the technique of the basketball game, since in it most movements are extremely open and versatile. The important role of anticipation largely requires special work with the complex system of nerve-related processes, which are dynamic and flexible to the external environment. This provokes the suggestion to develop perception, anticipation, decision-making ability, automation and consistency of activities by means of the game approach in the basketball lesson.

Keywords: basketball, game approach, coordination, technique, swiftiness, agility.



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Развитие на координационните способности в урока по баскетбол със средствата на игровия подход

Абстракт: В спортологичната литература повечето автори определят ловкостта като двигателно качество на човека и като функция от степента на развитие на останалите двигателни качества. Свързаността на ловкостта с останалите двигателни качества, както и с двигателните навици, е неоспорима. Бързината, точността и икономичността, с които се овладяват и изпълняват сложни в координационно отношение двигателни действия, са конкретните измерители на ловкостта като двигателно качество, както и са характерни за техниката на играта баскетбол, тъй като в нея повечето движения са изключително отворени и разностранны. Важната роля на антиципацията в особена степен изисква специална работа със сложната система от нервни процеси, динамични и гъвкави към външната среда. Това провокира предложението за развитие на възприятията, антиципацията, способността за вземане на решения, автоматизацията и последователността на действията със средствата на игровия подход в урока по баскетбол.



Introduction

In literature on sports, most authors define agility as a human motor quality as well as a function of the degree of development of other motor qualities. V. Gavriyski, for example, claims “... that it is a matter of a perfect motor habit of gradual accumulation of adequate motor programmes, which at a given moment can be applied according to the requirements. High, perfect coordination of movements lies not at the basis of the so-called motor quality of agility, but at the basis of the motor habits created by training, at the basis of movement technique” (*Gavriysky 1982:828*).

According to Zhelyazkov, “Agility is a person’s ability to coordinate their movements and activities in time, space and effort adequate to the motor task” (*Zhelyazkov 1986:182*).

M. Smochovsky claims that “the complexity and the degree of generalization of the so-called motor quality *agility* make it difficult to differentiate the designation, as well as the special improvement of the coordination abilities that determine performance. As a component of motor abilities, coordination abilities meet the requirement for perfection, precision, finesse and amplitude of movements. There is an inextricable link between coordination ability and performance technique. Technique defines the components of movement, and coordination can combine these components more quickly and sparingly” (*Smochovsky 2001:18*).

D. Dasheva and T. Zhelyazkov point out that “an important moment for revealing the essence of agility is the issue of its relationship to other motor qualities as well as with motor habits. Despite the differences in the methodological approach, the results of the research show that muscular strength, speed qualities, flexibility and to a certain extent endurance are parametrically related to agility – on the one hand, it depends on the level of the mentioned qualities and, on the other hand, it plays an important role in their realization.” (*Zhelyazkov & Dasheva 2002:196*)

I. Peltekova defines the term *agility* as mobility, nimbleness, swiftness, dexterity, adroitness. “It is a combination of skills that include coordination, speed, strength, endurance, flexibility, adroitness. With the help of agility training the athlete’s ability to maintain balance under changing circumstances is improved; the speed of execution of individual movements, coordination and strength is improved as well.” (*Peltekova 2014:38*)

Swiftness, accuracy and sparingness, by means of which one masters and performs coordination complex motor activities, are the concrete measurements of agility as a human motor quality.

The mobility and dynamism of the nerve-related processes in the cerebral cortex appear to be the physiological basis of agility; from a psychological point of view, it is closely related to the completeness of perception, the swiftness and accuracy of complex reactions characterizing the so-called anticipation – the ability to anticipate the reflection of reality, which applies especially to the basketball game.

According to M. Aleksieva, in contrast to the restricted, stereotypical actions, in basketball most movements are extremely open and diverse. The simplified model of perceiving

information, processing it by the central nervous system and bringing it to the reproduction of movement is too short. In all cores of this model, problems occur in sports play.

The perception of information is hampered. Good perception in the game situation is restricted psychologically because the analyser (e.g., the eye) has only limited capacity for success (time for optical search, registering the speed of the object, etc.). It is essential to separate what is important from what is unimportant in the diverse complex of information because the capacity of perception is limited.

In addition, the processing of information is also extremely difficult as it is under time pressure; movement in a game should be performed within a learned or memorized movement program. In terms of difficulty, the optimal program should be selected related to perception in the shortest time resulting in a situationally appropriate movement program. The basis for successful behaviour in a game is the movement pattern, which is the skeleton for the variety of movements required by the game.

The reproduction of information also cannot be stereotypically programmed into the sports game due to sudden influence from outside (e.g., it can be from a teammate as well as an opponent). Changes in the programme are necessary. Correct perception is crucial, related to selecting the most relevant of various pieces of information, i.e., the use of the so-called selective attention. The opportunity to find the respective movement program as quickly as possible and, through internal and external feedback, to effect modification and variation at all levels of processing is needed. The more similar programs exist, the better movements can be adapted to the required situations (*Aleksieva 2012:46*).

What has been discussed above triggers the attitude to work, namely to develop from an early-age perceptions, anticipation, ability to make decisions, automation and consistency of actions that are the hallmark of the good player.

Methodology

The proposal for games focusing on the development of coordination abilities of students in the physical education and sports lesson with the theme of basketball employs the game approach. These games have been approbated in practice and prove to be attainable for most of the students who are at the stage of improving their techniques of catching and passing, dribbling, shooting on the move, as well as the tactical activities of choosing a position in attack and defense.

1. The Circle: Inside and Outside (Figure 1)

The game is suitable for the preparatory part of the physical education and sports lesson with the theme of basketball. It focuses on catching and passing, as well as on choosing a position in offense.

The students form two concentric circles in the basketball court; those in the outer circle are given balls. At a signal by the teacher, each student from the inner circle chooses which student with a ball from the outer circle to go to and receive the ball from, then returns it to him, goes back to the inner circle and again goes on to receive the ball from another player in the outer circle; all the time the movement is in a running motion, preferably moving with your back in the direction of the movement when returning to the circle. The basic rule is that they are not

allowed to receive the ball from the same passer from the outer circle. Another important rule is that when someone is already heading towards a particular player with the ball, a second student is not allowed to head towards them; they need to look for a free player with a ball. The method of passing is regulated in advance – with two hands from the chest, with one hand, overhead, etc.

After a certain number of plays (or after everyone in the inner circle has received the ball from everyone in the outer circle with the specified pass), the students' places change – those from the inner circle become passers and those in the outer circle become receivers.

2. Reject the Shipment (Figure 2)

The game is suitable for the preparatory part of the physical education and sports lesson with the theme of basketball. It focuses on catching and passing, as well as moving in defense.

The students are divided into four groups of five or six people and positioned away from the baskets in the court, forming a circle. Each group is given one ball. Two students without balls are positioned around the central circle. On one sound signal by the teacher, the students in each circle begin passing the ball to each other in a pre-specified clockwise manner; on two signals by the teacher – counter-clockwise, and on the pass command, the student who is in possession of the ball at the time of the command should pass it to a player in the opposite column (along the length of the court) without giving either of the two students the chance to cross the pass or touch the ball during the pass. If this happens, the student who misplaced the pass takes the place of the student in the centre of the court and the other student takes their place in the respective circle. If the distance between the two groups is long for such type of pass, the circles may take a position closer to the central line.

3. Take It or Bring It (Figure 3)

The game is a relay game and is suitable for the main part of the PE and sports lesson with the theme of basketball. The focus is on catching and passing, dribbling, and motion in offence. In addition to developing agility, the game also facilitates the development of the endurance quality.

Students are divided into two or three teams, which are divided into two sub-groups and positioned opposite behind pre-drawn lines parallel to the foul lines of the basketball court. Three (or more) cones (or hats) are arranged between them, on the first two of which tennis balls are placed.

The game starts with the first student in the column who has a basketball, and after a signal by the teacher, starts dribbling to the first cone, takes the tennis ball, moves it to the cone that has no ball, repeats the same movement with the other two cones without stopping the dribble, then continues dribbling to the first student on the opposite column and passes the basketball hand in hand. They perform the same movement. The play continues until all students have moved from one column to the opposite column. The winner is the team that completes the task in the shortest time. If a tennis ball falls off the cone, the player who has failed to accurately place it on the cone should go back and place it again.

A variation of the game can take place if there are more cones and the players return to a cone that has no tennis ball before moving to the opposite column.

4. Agile Waiters (Figure 4)

The game is a relay and it is suitable for the main part of the physical education and sports lesson with the theme of basketball. It focuses on catching and passing, dribbling, and moving in offence.

Students are divided into a minimum of three teams that stand in a column on the starting line parallel to the foul line of the basketball court facing the other basket. The first person in each column has a basketball in their hands. Cones or other landmarks (minimum five in number) are lined up in front of each column, and four hats are lined up almost to the end line, with the wide part facing the floor and one facing the opposite way, containing four tennis balls. At the start signal marking the beginning of the game by the teacher, the first person in each column starts dribbling, gets over the cones changing the leading hand, reaches the tennis balls and without changing the dribble takes one of them and places it on the first hat, then takes a second ball, places it on the second hat, etc., then returns again dribbling to the left of the column and passes the ball to the second person hand in hand.

They start dribbling, get over the cones in the same way, but when they reach the hats, they have to take the tennis balls one by one and place them in the hat, which has the wide base up. They return in the same way.

The third player repeats the movement of the first, the fourth of the second, and so on. The team whose players have performed the activities and have stood in their original alignment position is the winner.

Basic Rules:

- The basketball is led by the outer hand against the cones.
- The dribble does not stop during the handling of the tennis balls.
- The return dribble is done in the same way (e.g., left only) for all columns to avoid collisions.
- If a tennis ball is not placed on a hat or falls off, the player should return and place it again.

5. Fisherman and Fish (Figure 5)

The game is a relay and is suitable for the main part of the physical education and sports lesson with the theme of basketball. The focus is on catching and passing, dribbling, and moving in offence.

Two students “fishermen” are positioned on the central line off the central circle of the basketball court, spinning a long rope. Two columns of students (“fish”) are positioned behind a starting line parallel to the free-throw line, with the first in each column having the ball. After the starting signal, the first in the columns dribble to the central circle, pass under the spinning rope, touch the far line of the central circle, without stopping the dribble, pass by the opposite student, who is spinning the rope on the outside, then dribble over the three cones with a change of lead hand, shoot on the move, control the ball, continue dribbling to the second student in the column and pass it to him hand in hand.

The winner is the first team to score 11 baskets (each accurate shot counts as one point).

After the game has been played and the score of the game has been recorded, the students line up on the other side of the foul line so they can execute the shot on the fly with their left hand as well.

Variations of the relay game may have different requirements in terms of dribble changes as well as types of finish at the basket.

Basic Rules:

- The basketball is led with the outer hand in relation to the cones.
- The dribble does not stop during the pass under the spinning rope.
- The return dribble is done in the same manner (e.g., left only) for all columns to avoid collisions.

Conclusion

Research shows that swiftness and agility training need to follow the specificity principle, showing that linear speed exercises lead to improvements in speed directly with a slight transition to agility and vice versa. It is therefore important to train these elements as separate components to ensure that speed and agility are at maximum.

The suggested games are designed not only to improve coordination abilities, but also to help improve students' stopping ability, change of direction, and footwork skills so necessary for the game of basketball. Physical activity is short to moderate, very intense with limited rest. Patterns of typical basketball movements are used, emphasizing the change of direction and the variability of the situation. In this way, the greatest movement efficiency is achieved with the respective appropriate levels of stability and mobility, form and technique.



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Appendix

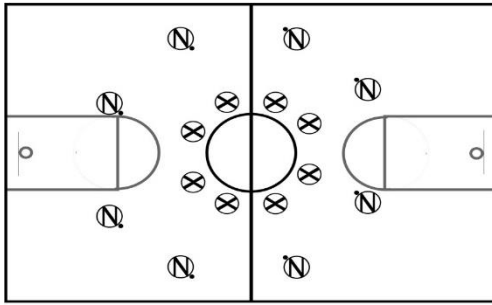


Figure 1. The Circle: Inside and Outside

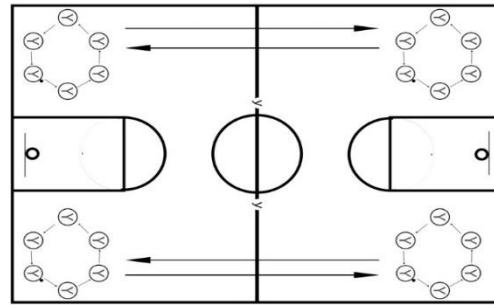


Figure 2. Reject the Shipment

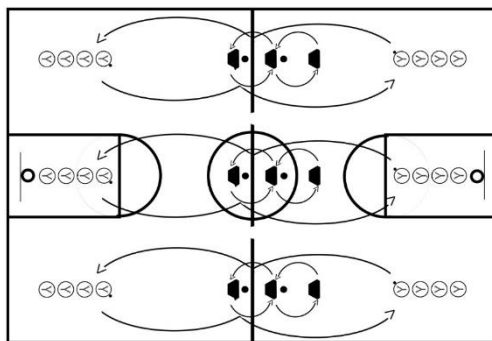


Figure 3. Take It or Bring It

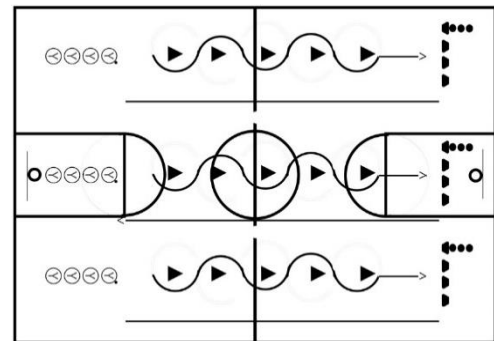


Figure 4. Agile Waiters

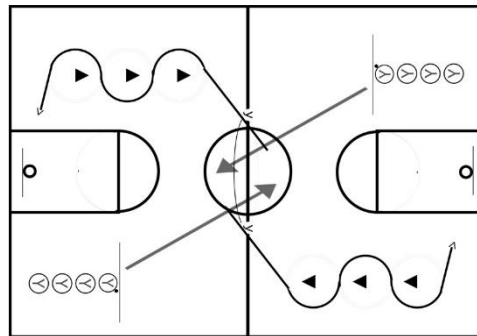


Figure 5. Fisherman and Fish