

NEW TECHNOLOGIES FOR VIRTUAL REALITY AND THEIR CONNECTION WITH THE BASKETBALL TRAINING PROCESS

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Background and significance

Science and technology continue to develop faster and faster nowadays, many new technological inventions and discoveries are introduced, intended for sports activities for both amateur and professional sports.

To improve the quality of training and training efficiency of athletes, various training techniques are used to change training methods.

The great competition in professional basketball requires a lot of long training and a lot of work on the players. Thus, the training process becomes increasingly difficult, fatigue accumulates in the athlete, reduces his ability to effectively acquire skills and negatively affects his performance in competitions, and can even lead to injury, which is the most undesirable event for all.

Virtual reality (VR) technology has been evolving in recent years. This is a technology that uses computer simulation to create a three-dimensional virtual world. It provides the athlete with visual, auditory, tactile, and other sensory reality so that the basketball player feels like on the court. In three-dimensional space, basketball players can interact with each other through special devices. This sense of commitment cannot be achieved with existing teaching methods. With the help of virtual reality technology, athletes can remove the cognitive barriers caused by time and space and let them immerse themselves in the imaginary simulation environment. The combination of VR simulation and basketball technology can play a big role in basketball training.

Virtual Reality (VR) Capabilities

The possibilities of virtual reality technology are increasingly being used in the training of hockey players and basketball players in the United States. They firmly state that VR technology encourages athletes to train more. The main goal for the application of VR is related to the

improvement of the fitness training of the athletes and the preservation of their health, which is directly related to the length of the sports career.

Washington's sports teams use the Oculus Rift to train their athletes. Businessman Ted Leonsis owns three Washington sports teams - the NHL Washington Capitals, the NBA Washington Wizards, and the women's NBA Washington Mystics. He has invested in VR technology for the benefit of his teams. Based on his technological experience at AOL, Ted Leonsis believes that VR will affect everything from player development to viewer experience: "It's inevitable if you want to believe."

The system originates from the laboratory for virtual human interaction at Stanford University and is called STRIVR. STRIVR is already used by seven NFL teams, three NBA teams, one MLB baseball team, and the US ski team. The various teams strive to improve their work with the help of VR technology (photo 1).



Photo 1. VR technology – on the court

One of the basketball elements that are most often improved through virtual reality is shooting from the penalty line (photo 2). The recommendations for good quality and maximum use of the possibilities of technology are to apply them to athletes by people trained to work with technology. Otherwise, there are a lot of "oscillations", noise and poor quality.



Photo 2. VR technology – Free throw shoot

A 360-degree virtual reality camera is also used in the sports training of basketball players. The 360 cameras allow the athletes to see the whole action so that the player can see which teammate is free, who is well guarded by a defender, and where it is best to make his next move so that he can get the ball free and shoot the basket.

Many gyms where basketball players train have already installed the VR training machine. The price is \$ 10,000 (USD), and a cheaper version, intended for home use, is being developed for \$ 2,000.

Different opinion

As always, there is another opinion on a topic under discussion, so is this case. Is there a benefit from virtual technologies for better activity and training for users of these tools? Not all sports professionals are convinced of their capabilities. For example, the fitness industry is testing various high-tech solutions to encourage sports enthusiasts to do more exercise, such as placing TVs on treadmills, but so far without success. Mr. Remco Polman of the Queensland University of Technology in Brisbane said "it should be borne in mind that, especially in public gyms, these technologies are used by people who have been training for a long time, not so much by those who are just starting out and new. He believes that the only way to enjoy the exercises is by sticking to them, instead of trying to use tricks and technology.

Conclusion

Despite conflicting opinions, many basketball experts support the thesis that the time has come to destroy traditional methods of teaching physical education and increase the diversity of basketball training. Traditional basketball training focuses mainly on learning the basic skills of basketball, such as improving dribbling, catching and passing, shooting, and in particular shooting for three points, in general, the curriculum is uniform. The use of VR in the training process will significantly increase the enthusiasm of basketball players for the acquisition of skills and will increase the quality of coaching.

I look forward to hearing from you on the following issues:

Do you like the idea of using VR in the training of basketball players?

In which part of basketball training do you think you can benefit most from using VR?

If anyone has any thoughts or suggestions, I would love to hear them in the comments in Moodle.

Reference:

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Recommended video:

<https://www.youtube.com/watch?v=RSzNAUyUVBE&t=19s>

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