Big Data-based Accurate Training is the Development Trend of Modern Sports Training Science

Yupeng Cui[1]

(1.Capital University of Physical Education and Sports, Beijing, China,100191)

Abstract

In the 21st century, with the rapid development of computer, information and network technologies, especially in recent years, the rapid development of technologies such as Internet, Cloud Computing, Internet of Things and Sensors, there had been a huge leap in human ability to collect, transmit, store, analyze and use data. People can use big data to reveal the laws of the world. For many natural processes, human being transformed from passive adaptation gradually to being able to predict and implement limited interventions, such as weather forecasting, intelligent irrigation, navigation and network sales. McKinsey company believes: "Big data refers to data sets that exceed the capabilities of conventional database tools for collection, storage, management, and analysis." This article reviews the application of big data in the field of sports training science in order to promote the use of big data in implementing accurate training, and improving the efficiency and effectiveness of sports training. The training of athletes is a systematic project, which not only relates to the physical condition of the athletes themselves, but also relates to many factors such as environment, climatic conditions, sports equipment and psychology. Traditional sports training was based entirely on the coach's knowledge, experience and analytical judgment. There were great drawbacks. Modern sports training theory had gradually increased the relevant theories of training cycle, overload training, over-recovery, etc., and entered the stage of "multi-disciplinary comprehensive development" including medicine, physiology, training, management, etc., which improving the scientific level of sports training science. But it has its limitations. The arrival of the era of big data brings new ways of thinking and operation to sports training theory and practice, that is, based on big data on sports training methods, content and load, athletes' physical function, and sports injuries. The treatment and rehabilitation, the timetable of the competition and the results of the competition are accurately judged, and finally the best training plan and competition plan are made. NBA researchers used the Advanced Scout tool to digitize the various performances of players on the field, optimize the game's technical and tactical arrangements through big data analysis. Researchers collected all the data during each swing after the swing through Track Man technology in golf to optimize the athlete's batting action and intensity. In addition, big data analysis technology has also been successfully applied in tennis, football and baseball. Accurate training based on big data is the trend of scientific development of sports training. The key technologies of big data include data platform, analysis platform and display platform. In order to achieve accurate training based on big data, sports training science also faces the following problems: 1. How to provide an appropriate large-scale data platform; 2. How to provide effective collection methods for various types of data; 3. How to carry out all data effective analysis.

Keywords: big data; sports training; accurate training

Biography of the presenting author
I am Yupeng Cui, Prof./PhD. I come from the section of physiology and biochemistry of exercise of Kinesiology department of the Capital University of Physical Education and Sports in China. My research field is supervision of the condition of athletes during training and ways to promote their athletic performance.

Category of submission: Best practice summary

My paper best fits: Other (general) Coaching practice