

Research on Football Training Method Based on Moving Object Detection

Meng Yabiao

College of Physical Education, Inner Mongolia Normal University, Hohhot, Inner Mongolia, 010020, China

Keywords: Sports Target Detection, Football, Research

Abstract: with the Continuous Improvement and Development of China's New Curriculum Education System Reform, College Football as an Important Part of Physical Education Teaching, Its Teaching Quality and Teaching Efficiency Has Been Widely Concerned and Highly Valued by All Walks of Life and People in Recent Years, But Throughout the Current Development of China's Football, It Has Been in a Difficult State. the Combination Training in Football Training Can Improve the Training Quality and Efficiency Fundamentally and Effectively. as the Main Method to Improve the Competitive Ability of Football Players, the Effectiveness of Football Training Will Be Affected by Many Factors, Such as Training Methods, Training Recovery and So on. Therefore, in Order to Improve the Effectiveness of Sports Training and Improve the Competitive Ability of Athletes, It is Necessary to Eliminate the Influencing Factors of Sports Training to the Greatest Extent, and Combine Scientific Sports Training to Achieve the Goal of Sports Training.

1. Introduction

Moving Target Detection Technology Has a Profound Impact on Target Tracking and Subsequent Behavior Analysis, and is Also the Primary Issue of Intelligent Monitoring System. the Target Detection Algorithm Mainly Analyzes the Continuous Video Sequence to Segment the Moving Target. in Other Words, by Analyzing the Video Sequence, the Moving Object is Separated from the Background Image. in the Real Life of Video Shooting, the Influence of Light, Wind, Shadow and Other Noises Makes the Detection of Moving Objects Difficult. the Detection of Moving Objects Can Be Distinguished According to Whether the Background Changes or Not. Background Unchanged Target Detection is Mainly Used in Video Surveillance and Video Based Human-Computer Interaction, While Background Changed Target Detection is Mainly Used in Video Compression, Automatic Driving and Robot Fields. in Reality, It is More Difficult to Detect the Moving Object Because of Its Wide Application.

2. Characteristics of Moving Object Detection

Because of Its Continuity, Video Image Contains Not Only Spatial Information But Also Time Information. Static Image Does Not Contain Time Information, and Its Segmentation Only Needs to Be Done in Airspace[1]. in This Paper, the Characteristics of Static Image Target Detection and Dynamic Target Detection Are Analyzed.

2.1 Concept of Time

The concept of time does not need to be considered in the static image analysis, and time has no effect on it; while the video image sequence contains the information of time domain according to the sequence order, and time has an impact on the process and result of video image sequence analysis from beginning to end. This is the main difference between the two.

2.2 Relevance of Objectives

The static image only analyzes the static parameters such as texture and edge, but there is no temporal correlation between them[2]. The video image sequence is continuous time continuous background shooting, and the research on it also needs continuous analysis, and these information has relevance.

2.3 Characteristics of Analysis

Static image analysis aims at some areas of static image, and its research objects are all static, without motion features; video image analysis is characterized by analyzing the motion parameters of the target from the frame image, and its research objects are moving.

3. The Influence of Football Training Factors

3.1 The Influence of the Characteristics of Football Events on the Effectiveness

Football training is a systematic work to develop the competitive ability of football players[3]. The characteristics of sports have a direct impact on the effectiveness of football training, mainly in the technical characteristics of sports, the composition of sports, the difficulty of sports skills and so on. For example, in the process of training difficult and beautiful sports such as gymnastics, the difficulty and structural characteristics of gymnastics will have different degrees of influence on Gymnastics football training[4]. When the coaches make the football training plan, they should strengthen the analysis of the characteristics of the sports, combine the development of the competitive ability of the football players, and implement the targeted sports training plan and organization mode, so as to carry out the football training more scientifically.

3.2 The Effect of Individual Differences on the Effectiveness of Football Players

As the main body of football training, in order to improve the effectiveness of football training, coaches need to analyze and formulate scientific training measures on the basis of scientific analysis of individual differences of football players. The analysis of individual differences of football players mainly includes: differences in competitive ability of football players, differences in psychological quality of football players, and characteristics of football players. The differences of case characteristics and football players' receptive ability can realize the organic combination of the development of sports competitive ability and individual differences[5]. With more suitable training methods, recovery methods and evaluation methods, we can guide the rapid development of football players' competitive ability, and promote football players to obtain more positive emotional experience and action skill development effect in the process of training.

3.3 The Influence of Football Players' Psychological Factors on Training Effectiveness

As one of the components of competitive ability of football players, excellent psychological quality is the key point to ensure that football players win in the fierce competition. For example: in the process of competition, under the situation of anxious score, the pressure resistance and anti-interference ability of football players are the key factors to ensure the normal play of their competitive ability[6]. Therefore, in order to better improve the competitive level of football players, coaches need to increase the training of psychological quality of football players in the process of daily training, combined with the characteristics of sports events, to implement targeted training organization work, so as to improve the psychological level of football players.

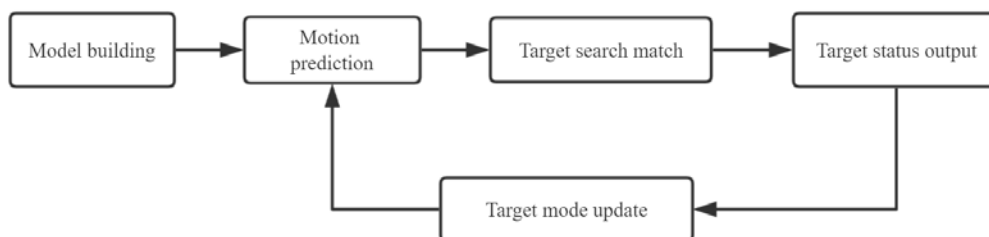


Fig.1 Moving Target Tracking Steps

3.4 Effect of Football Training Methods on Effectiveness

Football training methods as the basis of ensuring the effect of football training, scientific football training methods need to be summarized, refined and practiced by coaches. Football

training method includes organization method, evaluation method and so on. Skill training method is the main part of the method system. Scientific football training method will play a positive role in the implementation of football training[7]. Therefore, it is necessary for the coaches to improve the scientificity and pertinence of the methods based on the comprehensive research of sports methods and the needs of the development of sports skills, so as to promote the comprehensive competitive ability of football players and the effect of football training.

4. How to Improve the Effective Training of Football

4.1 Improve the Understanding of Winning Rules in Football Training

In the process of football training implementation, in order to better improve the effectiveness of football training, coaches need to comprehensively, scientifically and objectively analyze the winning rule of football training items. On this basis, combined with the winning rule characteristics of sports items, formulate targeted sports training objectives, training plans and training methods, so as to promote football players' competition Comprehensive improvement of ability. For example, in the training of middle and long distance running sports, the winning rule is to have good endurance quality, and to improve the special competitive ability of football players by improving their running efficiency[8]. This requires coaches to increase their aerobic endurance, anaerobic endurance, psychological quality and other training, so as to better adapt to the winning rule of the middle and long distance running.

4.2 Give Full Play to the Positive Guiding Value of Scientific Football Training

In the process of the development of competitive ability of football players, the scientific guidance of football training value is an effective means to help football players correctly understand the training law of sports events and the development law of competitive ability. Therefore, in order to better promote the scientific level of football training, coaches need to increase the positive guidance of scientific football training, stimulate the training cognition of football players through positive guidance, promote the overall ability of football players in sports skill cognition, grasp the key and difficult points of football training, self-evaluation of football training effect and so on. There are many methods of positive guidance, such as action video guidance, language motivation, action demonstration guidance and so on. In the process of using the positive guidance, coaches need to fully follow the rules of sports training, and implement the positive guidance results of football training on the basis of scientific demonstration.

4.3 Optimizing the Selection and Strengthening of Football Training Items

In the process of football training implementation, there is a direct relationship between the content of football training items and the methods of football training. In order to better promote the level of football training, coaches need to optimize the selection of sports items, strengthen the transfer of sports skills, and combine the characteristics of the project to implement the scientific training of sports skills. For example, in order to improve the effect of the training, the coach should analyze the characteristics of the dribbling action and combine the action characteristics of the football players to carry out the targeted strengthening training[9]. The strengthening methods include the training of the dribbling action and the strength strengthening training. Through targeted intensive training, to help football players to eliminate the adverse factors that affect the action of passing the ball, and promote the continuous improvement of competitive ability of football players.

Table 1 Comparison Chart of Tracking Operation Time of Two Algorithms

Traditional Kalman algorithm (s)	Fast Kalman algorithm (s)	Reduction time (s)
99.51909	89.66905	9.850039
108.6416	99.04733	9.594224
117.5828	108.3223	9.260472
126.8797	117.6793	9.20041
135.8409	126.7572	9.083678
144.556	135.627	8.929003
153.2797	144.6034	8.676219

4.4 Evaluation Benefits of Strengthening Sports Skill Training

Football training evaluation as a key to improve the evaluation of football training effect, the level of football training effect also needs scientific classroom teaching evaluation of coaches to achieve. Therefore, in order to improve the efficiency of football training, coaches need to carry out the scientific evaluation of sports skills on the basis of comprehensive analysis and formulation of sports skills evaluation standards and programs, combined with the reality of football training. The content of evaluation includes football players' overall cognition, training effect, progress, on-the-spot performance and other factors[10]. At the same time, in order to further improve the effectiveness of sports skills training, coaches need to innovate the evaluation methods of sports skills training, guide football players to correctly treat the process, results and improvement space of football training, so as to promote the improvement of the overall competitive ability of football players.

5. Application of Combination Training in Football Training

5.1 Physical Training

In a way, in the process of football training, the training activities are carried out around football. Therefore, for the education of professional athletes, there is a significant gap between College Students' feeling of football and the time of contact with football, which often leads to the current college students' football training failing to achieve the expected goal. Therefore, it is necessary to strengthen the physical training of college students to solve the above problems effectively.

5.2 Technical Training

Different from physical training, tactical training and comprehensive training, technical training is insurmountable to some extent. The implementation of various training strategies should strictly follow the principle of "step by step". Only in this way can we fundamentally ensure the smooth implementation of various operations, and then lay a good foundation for the improvement of the overall level of students.

6. Conclusion

To sum up, on the basis of the overall improvement of football training level in Colleges and universities, our country's sports training level is also constantly developing towards the direction of scientific and high-level. But for football training, it is always worth exploring to improve the level of training. Therefore, in order to better improve the effectiveness of football training, it is necessary to innovate football training methods and develop personalized training plans in accordance with the characteristics of sports and the winning laws of sports on the basis of increasing the influencing factors of football training, so as to promote the effectiveness of football training.

References

- [1] Farrow D. (2017). Super-elite athletes: Some complimentary observations from Australia and some lessons for sports expertise research: Comment on Hardy et al.
- [2] Margo Mountjoy, Lars Engebretsen. (2019). How sport and exercise medicine research can protect athlete health and promote athlete performance. *British Journal of Sports Medicine*, pp. bjsports-2019-100749.
- [3] Hugo Folgado, Bruno Gonçalves, Jaime Sampaio. (2017). Positional synchronization affects physical and physiological responses to preseason in professional football (soccer). *Research in Sports Medicine*, vol. 26, no. 3, pp. 1-13.
- [4] Andrew W Kuhn, Aaron M Yengo-Kahn, Zachary Y Kerr. (2017). Sports concussion research,

chronic traumatic encephalopathy and the media: repairing the disconnect. *British Journal of Sports Medicine*, vol. 51, no. 24, pp. 1732-.

[5] Kirby S. (2017). *Advancing Sport Mega-Event Research - Five Critical Themes*.

[6] Richard Pringle. (2017). *On the Development of Sport and Masculinities Research: Feminism as a Discourse of Inspiration and Theoretical Legitimation*. *The Palgrave Handbook of Feminism and Sport, Leisure and Physical Education*.

[7] B. Knechtle, PT Nikolaidis. (2018). Sex- and age-related differences in half-marathon performance and competitiveness in the world's largest half-marathon – the GöteborgsVarvet. *Research in Sports Medicine*, vol. 26, no. 1, pp. 75.

[8] Peter W Harrison, Rich D Johnston. (2017). The relationship between training load, fitness and injury over an Australian rules football preseason. *Journal of Strength & Conditioning Research*, vol. 31, no. 10, pp. 2686.

[9] Alister McCormick, Carla Meijen, Paul A. Anstiss. (2018). Self-regulation in endurance sports: theory, research, and practice. *International Review of Sport & Exercise Psychology*, pp. 1-30.

[10] J. P. Verma. (2018). *Repeated Measures Design for Enhancing Precision in Sports Research*. Wiley StatsRef: Statistics Reference Online.