

The Scientific Process of Competitive Sports Training Preparing for the 2008 Olympic Games

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It is being the main trend of sports development that modern science theory and technology increasingly infiltrate and dripped into the fields of sports training in the round. The advanced scientific theories and technique made the process of cultivation more systemic, scientific and economical, also adequately excavated the comprehensive potential of the athlete so that it could improve the performance enormously.

The 29th Olympic Games will be held in Beijing in August, 2008. As the host, we should not only hold the supreme games successfully, but also achieve a more remarkable performance. Therefore, recent years the governments of competitive sports have increased diversified devotion in sports training, especially the investigation on national teams, so as to enhance the training quality by means of the exaltation of scientific level in training. Generally the improvements of scientific training level are as follows:

1. The application of multi-subjects theory and technology in sports training

The process of sports training is complex. It is difficult to solve the training problems roundly and drastically using single subject theory and technique. And nowadays the research on sports training through different points of view is being an important development direction in competitive sports investigation.

During the course of sports training preparing for the 2008 Olympic Games, many scientists from different fields carried through lots of cross-research. For Example, the cross-research on canoeing and rowing not only improved research level in sports training, but also enhanced practice performance.

2. The control of training process was emphasized much more.

“Result” is the synthetical and statistic description of the competitive ability and the outcome of the periodic training. “Process” is the dynamic description of the development of competitive ability and the analysis of the reason of outcome. For a long turn, people take great attention upon the measuring, analysis and evaluation of the “Result”, nevertheless run short or ignore the research on the “process”. This situation affected coaches and athletes to understand the details and their dynamic diversification of the item, which led to the disjunction between training methods and specific technique and reduce the level of specialization and individuality. This is the main reason why energy-events have low scientifically standard.

Generally speaking, there are four aspects of the “process control” which can improve the efficiency of training:

- (1) To know the characteristics of item more truly and deeply shaping the correct training direction from headstream.
- (2) To give prominence to the systematization of training, have a general and integrative control of the whole training and contest.
- (3) To pay more attention to the dynamic and the changes, which means to describe the particular content and the process of the training constantly.
- (4) To attach importance to the message of training keep-back more swiftly and more betimes, impulse the quantification of the training.

3. The research on Altitude training and Hypoxic Training

Altitude training is one of most important training methods for preparing the 2008 Olympic Games. Nowadays, in many fields of sport, especially those focusing endurance such as canoe, long-distance race, swimming and triathlon., athletes are used to a systematical Altitude Training, In China, we have excellent surroundings to carry through Altitude training and have built many famous Altitude Training Bases in Yunnan, Qinghai, Gansu and Neimenggu where training facility were very abundant.

While the Hypoxic Training methods have made great progresses, we have set some Hypoxic Training Bases in Beijing and Shanghai. In those bases, we tried different ways of Hypoxic Training and a lot of High-Level Athletes attended the training under Hypoxic conditions. Based on the former researches, Chinese researcher Hu Yang brought forward a new training model named HIHILO which let the athletes live in the man-made Hypoxic surroundings while the main training was under natural condition, and the assistant training was Hypoxic Training.

Today, no matter for the Altitude training under natural surroundings or for Hypoxic Training under man-made conditions, there's a long way for the human to explore the rules hidden behind the training.

4. Applying biofeedback theory and method to enhance training quality

Biofeedback technique has different means in different occasions. It can refer to either a kind of process happening inside organism or to a kind of method, a kind of special therapy as well. In sports training, biofeedback mainly refers to a kind of method, in which normal or abnormal activities of the inner organism are detected through electronic instruments and then are fed back to the host by means of the visual or sonic signals. Its purpose is to control these imperceptible physical activities.

Since 2000, we have tried biofeedback method in diving and canoeing training. We have exploited a video fast-feedback system for in-flight maneuver and a biofeedback system for the springboard take-off effect to help divers learning and grasping diving techniques rapidly. We also got a good result of biofeedback training in our national canoeing team.