

LONG-TERM ATHLETE DEVELOPMENT:

# TALENT IDENTIFICATION

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**T**here is no doubt that those associated with sport continue the quest for performance excellence. Coaches and athletes, in particular, continuously search for answers to

(1) What is the role of performance-based, long-term athlete development and assessment and (2) What is the role of sport science and technology in the development of skilled and empowered coaches who are responsible for creating environments conducive to performance excellence?

Previously (The Medalist, August, 2007), we have focused on the question involving the role of technology in the development of skilled and empowered coaches. This time, we will focus on long-term athlete development (LTAD), specifically, talent identification. There appear to be three general categories of talent identification approaches:

(1) Systematic, governmental systems; (2) systematic, non-governmental systems; and (3) non-systematic approaches.

- **Systematic, governmental systems** – former soviet bloc countries; China; Cuba
- **Systematic, non-governmental systems** – tennis, swimming with well-structured age-group programmes; developmental infrastructure identifies and reinforces talent moving through system
- **Non-systematic approaches** – somewhat random identification systems with no particular



approach; in essence, they appear to be little more than physical education classes designed as scholastic teams by coaches

Talent has several properties that are genetically transmitted and, therefore, innate. Nevertheless, talent is not always evident at an early age. Qualified human movement specialists may be able to identify its existence by using certain markers. These early indications of talent can provide a basis for predicting those individuals who have a reasonable chance of succeeding at a later stage. Very few individuals are talented in any single domain; indeed, if all children were equally gifted, there would be no means of discriminating or explaining differential success. Furthermore, talent is specific to that particular domain. Ericsson, Prietula, and Cokley (2007) identified consistent and overwhelming evidence that experts are made, not born. There does not appear to be any substantive correlation between intelligence quotient (IQ) and expert performance in areas such as chess, music, sports, and medicine. The only apparent innate differences that are significant involve height, weight, and actually body size, specifically with regard to sports. The investigators also determined that deliberate practice facilitates the development of expertise. Deliberate practice involves specific and sustained efforts to perform that which the athlete has the greatest challenge with. It is only by placing effort at what cannot yet be done that an expert continues to develop.

The complex nature of talent is highlighted by these principles. It is not surprising, that there is no consensus of opinion, nationally or internationally, regarding the theory and practice of talent identification. Usually professional clubs depend on the subjective assessment of their experienced scouts and coaches, employing lists of key criteria. These are set out as acronyms; for example, the key phrase incorporated in the scouting process of Ajax Amsterdam is TIPS, standing for Technique, Intelligence, Personality and Speed. Alternative lists include TABS (Technique, Attitude, Balance, Speed) and SUPS (Speed, Understanding, Personality, Skill).

Talent detection refers to the discovery of potential performers who are currently not involved in the sport in question. Due to the popularity of football (soccer), for example, and the large number of children participating, the detection of players is not a major challenge when compared with other sports.

Talent identification refers to the process of recognizing current participants with the potential to become elite players. It entails predicting performance over various periods of time by measuring physical, physiological, psychological and sociological attributes as well as technical abilities either alone or in

combination.

A key question is whether the individual has the potential to benefit from a systematic programme of support and training. Talent identification has been viewed as part of talent development in which identification may occur at various stages within the process. Talent development implies that players are provided with a suitable learning environment so that they have the opportunity to realize their potential. Long term athlete development refers to the investiture of commitment, time, effort, energy, finances, and other key factors that are necessary for the development of athletes through their lifespan.

The area of talent development has received considerable interest of late, leading several researchers to suggest that there has been a shift in emphasis from talent detection and identification to talent guidance and, therefore, long term athlete development.

Talent selection involves the ongoing process of identifying players at various stages that demonstrates prerequisite levels of performance for inclusion in a given squad or team. Selection involves choosing the most appropriate individual or group of individuals to carry out a task within a specific context.

For many years, scientists have attempted to identify key predictors of talent in various sports. In this type of research, particularly evident in Australia, China, Cuba, and the former Soviet eastern bloc countries, there are attempts to identify characteristics that differentiate skilled from less skilled performers and to determine the role of heredity and environment in the development of expertise.

For instance, identifying and selecting talented volleyball athletes are not straightforward operations. Detection and identification of talent are more difficult in team games than in individual sports such as running, cycling or rowing, where predictors of performance are more easily scientifically prescribed. Long-term success in a team sport is dependent on a host of personal and circumstantial factors, not the least of which is the coherence of the team as a whole and the availability of good coaching. These factors make it difficult to predict ultimate performance potential in many sports at an early age with a high degree of probability.

### **What does this lead to?**

The most effective contribution from sport science to talent identification is likely to be multidisciplinary and in the form of Performance Enhancement Teams (PETs). Identifying talent for games at an early age is not likely to be mechanistic or unidisciplinary. Successful identification needs to be followed by selection into a formal programme for developing playing abilities and



nurturing the individual holistically towards realizing the potential predicted. Eventual success is ultimately dependent upon a myriad of circumstantial factors, including access and opportunities to practice, staying free of injury, and the type of mentoring and coaching available during the developmental years. Personal, social and cultural factors also influence ultimate performance.

Skills such as speed, dynamic and static balance, focus, power, and agility are packaged differently by sport, but it is critical for youngsters to have baselines for basic skills. These skills will transfer to a youngster's primary activity, so everything that a youngster does to improve the quality and extent of baselines from which sport-specific skills can grow can enhance opportunities to excel in sport.

For example, most games played are possession sports. Rugby, soccer, baseball/softball, field hockey and basketball have roles and strategies that allow each team to control the ball for extended periods of time. One statistic kept for these sports is time of possession of the ball for each team.

The sport of volleyball, however, it is a team sport of rebound and movement. The ball is never motionless from the moment it is served until it contacts the floor or is whistled dead by an official. The size of the court is relatively small for the number of players, creating a congested playing area. Because of this, the game has evolved into one of efficiency, accuracy and supportive movements. Each team has a maximum of three contacts with which to accomplish the game's objective, which is to return the ball and have it contact the floor on the opponents' side of the net within the boundaries of their court. The outcome of the rally, game and match becomes a summation of each player's efforts. This is the ultimate in individual contribution and team effort.

The individual techniques of the game are quite different from those of most team sports. Because the essence of the game requires the body to move through all zones of movement, the ball can be played at the highest point of a jump or just inches from the floor.

The forearm pass is one technique unique to the game. No other team sport fosters ball to forearm contact as an accurate and efficient skill. Sitting volleyball is yet another example of adaptations in volleyball performance technique.

### **Developing Performance Excellence?**

Excellence in performance shares common roots regardless of its form of expression. The concert pianist, research neurologist, and Olympic athlete are all products of sequential, multi-stage development systems. The commonality among these pathways to excellence is surprisingly strong. In his seminal book, *Developing Talent in Young People*, Bloom determined that superior performers practiced intensively, had studied with devoted coaches, and had been positively supported by their families during the formative years. Additionally, the amount and quality of practice were essential elements in the level of expertise that was achieved.

Istvan Balyi, a sport scientist and coach from the Hungarian/Eastern European system now residing in Canada, integrated much of what was involved in talent identification and long term athlete development in the Eastern European system and adapted it to meet the needs of democratic societies, with particular focus on UK Sport and Sport Canada.

A number of criteria necessary for effective talent id tests have been identified. Here is a quick overview (Kearney, 1999):

#### **Stability-**

Variable being measured is stable or unchanging over time and is only minimally impacted by growth and development. Variable must have a very strong genetic component to it, and be independent of the experience and training of the athlete.

#### **Tunneling –**

The variable is measurable at a young age, and effectively predicts the adult status on that characteristic. If height is a variable with strong tunneling, height of 7-



8 year olds would be highly predictive. Height, however, is not a good example of tunneling because of the significant variation in rate of development across people. Early maturers are taller, younger, and do not reach the adult height of some later maturers.

### Performance relevance –

Variables used for talent id should be intuitively relevant to performance. Critical variables include those that are underlying characteristics that are common among all individuals who achieve a high level of athletic success within a sport discipline, but are not necessarily capable of differentiating among elite level performers. An example might be oxygen uptake among elite 10,000 meter runners. All individuals capable of running less than 30 minutes for a 10 K will have an oxygen uptake above 75 ml.kg.min; however, there is a weak relationship between oxygen uptake of these elite runners and performance times. In contrast, a related variable is a variable that may help differentiate among elite level performers when present in concert with critical variables. Using the same example of 10 K runners, the velocity at lactate threshold, or velocity at vo2 max, has a much stronger relationship to competitive performance capacity than simply oxygen uptake.

### Assessment integrity –

Traditional measurement and evaluation criteria of validity, reliability and objectivity. In the area of talent identification, this can be challenging, as tests may be valid and reliable but not objective or any other combination. A test may validly assess a certain physiological, psychological or morphological characteristic, but that characteristic may not be a valid predictor of athletic talent. Test validity measures the intended variable, but that variable is not a valid predictor of talent; therefore, the test is not valid for use in talent identification.

### Applicability –

Needs to be applicable to the environment in which it is going to be used. The characteristics that contribute to the applicability of a test is that it must be simple, easy to administer, and field-based. There is a continuing debate about the use of field-based vs. laboratory-based tests. The general philosophy reflected in the literature is that field-based tests should be used for initial screening and that the results of these may be further differentiated by the use of laboratory-based procedures on a more select group of individuals. Categories of Talent identification tests include:

#### Morphological

- Somatotype (stature)
- Mass
- Height
- Fat-free mass
- Length and interrelationships among segment lengths

#### Motor

- Strength
- Speed
- Reaction time
- Agility
- Flexibility
- Balance – static and dynamic

#### Psychological and Sociological

- Personality Traits
- Psychological profiling
- Readiness
- Coachability
- Self-concept
- Sociometric skills and assessments

#### Significant others

- Visual perceptual skills and assessments

## Decision making and “Game Intelligence”

In a South African context, most youth participate in sport in concert with either their parents or their direct peer group. It is very difficult to direct a young person's participation toward a sport that is not part of their social culture regardless of how they may have scored on a talent identification test.

Political examples of former Eastern bloc countries showed that potentially gifted athletes had opportunities to significantly enhance the overall well being of their family, as well as be psychologically rewarded with the notion that they were contributing to a national goal. These factors increased motivation for young, potentially talented individuals, to participate in that activity.

Not only are traits genetically inherited, but there also appears to be a genetically-based trainability such that some individuals have the capacity to adapt positively to training, whereas other individuals may not respond as favorably. Individuals who also have a broader range of genetic input may in fact have a greater potential for achieving high levels of performance in certain areas. There may be a number of other intervening variables such as parental influence, peer group contribution, political priorities, and nutritional status that can contribute to the evolution of an athlete from initial identification to long term performance success.

## What about the future?

The following include possibilities for the attainment of appropriate long-term athlete development programmes that include talent identification as a part of the equation for athlete success:

- **National Governing Body (NGB) funding** – each national sport body in South Africa would benefit by investing resources just below national competitive phase to identify and recruit talented and motivated athletes
- **Those National Governing Bodies with limited funding** - implement talent identification programmes to increase probability that specific athletes will have success at highest levels
- Global **talent identification summit** including coaches, athletes, programme directors and sport scientists to share knowledge of most successful international and domestic talent identification programmes, development of meaningful assessments, and sustainable results. This would be an outstanding opportunity for the University of Pretoria's High Performance Center to be intimately involved with this.
- Analysis of talent identification systems on three quality dimensions that include structure, process and outcome as they relate to talent identification, talent selection, and talent development 🇷🇦

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