

Title: Talent Identification

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Introduction

It could be argued that competition itself might very well be the best form of talent identification, with competition seeing the best or most talented athletes rise to the top in their chosen sport (Peltola 1992). However the many athletes that do not succeed in the particular sport they have chosen, along with many that do achieve a degree of success, may be better suited to a different sport and never realise it (Peltola 1992). With this in mind and considering that without talent development talent identification would be a

waste of time and resources (Jarver 1982), it is easy to see why talent identification is a term that is often confused with the term talent development (Peltola 1992, Hoare 1995). Therefore it is vital, for the purposes of this review, that talent identification is clearly defined before discussing the topic further. Peltola along with Thomson and Beavis define talent identification as "that process by which children are encouraged to participate in the sports at which they are most likely to succeed, based on results of testing selected parameters. These parameters are designed to predict performance capacity, taking into account the child's current level of fitness and maturity. "1

In years gone by, and still in western countries, an individual's participation in a particular sport might well be determined by such factors as "tradition, ideals, desire to take part in a sport according to its popularity, parental pressure, a high school teacher's speciality, the proximity of sport facilities, etc. "2 This system can lead to the more popular sports in a particular country having a plentiful supply of athletes while the lower profile sports struggle for participants (Peltola 92). But for many specialists involved in sport, hoping that individuals have chosen the sport that they are best suited to, and waiting for talented individuals to identify themselves through competition, is not good enough for modern sport. Instead, with the aid of sport scientists, many countries and individual sports within countries have developed specific methods to identify talented individuals, and help those individuals choose the sport that is best suited to their abilities (Bompa 85).

While talent identification through competition has, in reality, been operating ever since organised competitive sport began. It has only been relatively recently that systematic talent identification has become a part of sport around the world (Baur 1988, Hahn 1990, Hoare 95, and Bompa 1985). Eastern bloc countries like the German Democratic Republic, the Soviet Union, Bulgaria and Romania are examples of countries that implemented state run, systematic talent identification programs as early as the 1960's and 70's (Baur 88, Bompa 85, Thomson 1992, and Thomson et.al 85). While western countries such as Australia and the United States have typically attempted to have systems in place to develop talented individuals after they have identified themselves through competition in their chosen sport (Peltola 92).

Several authors, (Peltola 92, Bompa 85, Thomson et.al 85) have written about the advantages and disadvantages of sophisticated talent identification programs. Bompa 85, Peltola 92 and Ghita 1994 see talent identification as helping to accelerate an identified individual's progression to an elite level and aiding them in reaching a high performance level by the time they reach international level. As

well as assisting individuals to select a sport that they are suited to, thus helping to eliminate the frustration's caused by participating in a sport that they are not suited to. They also see talent identification as being advantageous to coaches by focusing their training time on athletes with higher levels of talent and abilities for their particular sport. Talent identification also allows countries to get the best from its limited sporting resources (Peltola 92). That scientific talent identification is a critical factor in the development of world class athletes is not in question (Alabin et.al. 80, Bompa 85, Hahn 90 and Wu 1992)

In contrast other authors see talent identification as having limitations due to the fact that large numbers of young athletes need to be tested in order to produce results (Hoare 95, Jarver 82 and Thomson et.al. 85). Likewise some experts argue that an expert coaches eye is still quite often the initial stage of talent identification and subsequent testing is merely reinforcing the talent potential of an already identified athlete (Jarver 82 and Kozel 1996). The ever increasing pressure and competition faced by all sports for government, sponsorship and spectator revenue in the 90's, makes it extremely difficult for governments and sports themselves to fund comprehensive talent identification programs. Another factor limiting talent identification is the fact that it is extremely difficult to reliably predict future development of an athlete when identification is carried out at a young age. Add to this the fact that talented children generally exhibit good all-round ability, which can make it difficult to identify the particular sport a young athlete will be best suited for. This makes it extremely difficult for individual sports to pinpoint the correct age to carry out their talent identification programs. Some experts feel that it could be detrimental for children to specialise in a particular sport before 13 years of age, while others see it as necessary to direct young athletes to some sports before they reach 12 years of age to aid efficient skill development. (Jarver 81 and Thomson et.al. 85).

Before implementing talent identification programs, countries and individual sports need to undertake thorough examinations of the specific factors that influence performance in a particular sport (Thomson et.al. 85). The factors that need to be examined are physiology, anthropometry and psychology (Baur 88, Bompa 85, Hahn 90, Jarver 81, Peltola 92 and Thomson et.al. 85). While Bompa (85) and Thomson et.al. (85) also include heredity and sociological factors. These factors have not been listed in order of importance. Their order of importance will differ between sports and for effective talent identification sports need to take this fact into account (Bompa 85). For some sports anthropometric measures may be crucial in talent identification e.g. height in basketball. While in talent identification of novices, desire to participate in a particular sport may be more important than VO^2 max which can be improved, to a certain degree, through training (Bompa 85).

Physiological factors that influence sporting performance can be assessed by administering tests such as measurement of maximum oxygen uptake (VO^2 max), which correlates highly with endurance type performance in athletes, determining blood lactate concentrations by taking blood samples from the ear (Thomson et.al. 85). As well as taking muscle biopsies in an effort to determine the type of sport an individual is most likely to be successful in by assessing the muscle fibre distribution in a particular athlete (Bompa 85 and Thomson et.al. 85). Assessing muscle strength via tests on devices such as the Cybex dynamometer can also aid in the evaluation physiological factors that influence sporting performance (Hahn 90).

Weight, height and length of limbs can greatly influence sporting performance in certain sports. Therefore during early phase of talent identification taking

anthropometric measures such as height, weight, limb lengths, skinfolds and examining hip and shoulder widths and then comparing these widths can aid in talent identification. At later ages hand plates and x-ray techniques can be used to determine whether growth is complete (Bompa 85 and Thomson et.al. 85). Sports such as rowing in Australia have compared their elite athletes with the general population. This comparison revealed that elite Australian rowers were a tall group with proportionally long leg and arm length compared with the general population (Hahn 90).

Research on the influence of psychological factors on sporting performance has recognised that psychological parameters can contribute as much to elite sport performance as physiological factors (Thomson et.al. 85).

Heredity is another factor that should be considered in talent identification (Bompa 85 and Thomson et.al. 85). Children tend to inherit physiological and psychological characteristics from their parents (Bompa 85). Although some inherited characteristics such as height, limb length, speed and co-ordination are not influenced by environment while others such as weight, endurance and strength can be altered through education and training (Bompa 85 and Thomson et.al. 85). A particular area that heredity could be useful in talent identification is in the area of training limits. If an athlete has reached the limits set by his inherited physiological characteristics it would be pointless for that athlete to continue to attempt to reach an elite level of sporting performance even though other measures used in talent identification suggest he can (Thomson et.al. 85).

Where an individual live, their socio-economic status and facilities available to them will all affect the kind of sport that athletes are selected for and subsequently participate in. If an athlete does not have the necessary facilities or simply cannot afford to participate in a sport it will be of little consequence in which sport they are identified as potential champions (Bompa 85 and Thomson et.al. 85).

Several authors caution that although tests that are used in talent identification give us a good indication of the future potential of an athlete, and the best direction in sport for that particular athlete, they are by no means fool proof (Hahn 90, Jarver 81, 82 and Thomson et.al. 85). While testing does provide a measure of the factors that influence ultimate sporting performance they do not test for drive, ambition or will to win. A young athlete who does not meet the minimum standards on the various tests may still succeed due to high motivation and commitment (Thomson et.al. 85). Similarly the tests administered have to be sport specific (Bompa 85).

After sporting organisations have identified the essential characteristics of their sport and events within their sport they can establish norm values and test batteries in a bid to determine where an individuals strengths lie (Bompa 85, Jarver 81, Peltola 92 and Thomson et.al. 85). Thomson et.al (85) suggest that test batteries need to not only identify potential champions but also encourage all round development and should evaluate all participants.

When talent identification is undertaken, both in terms of chronological age and biological development of an athlete, is a crucial issue (Alabin et.al, Baur 88, Bompa 85, Ghita 94, Peltola 92, Thomson et.al. 85 and Wu 92). There seems to be different opinions as to the precise timing of talent identification screening. Bompa (85) feels that comprehensive talent identification needs to be carried out a number of years with three main phases. The primary phase of talent identification should occur during the years 3-8and needs to be dominated by a

physician's examination and is aimed at detecting body malfunctions and physical deficiencies which may restrict future sporting endeavours. The secondary phase of talent identification should be conducted between the ages of 9-17, however this age range will vary between sports e.g. 9-10 for gymnastics, 10-15 for girls and 10-17 for boys in other sports. This phase of talent identification needs to be conducted on athletes who have already experienced organised training and requires a comprehensive assessment of physiological and anthropometric parameters. Psychological assessment and profiling commence in this phase. The final phase of talent identification is mainly concerned with high calibre athletes e.g. national team members. Talent identification in this phase needs to be very sport specific and painstaking. With particular attention paid to the athletes health, physiological adaptation to training and their potential for further improvement.

Contrast this with Peltola (92) who sees the first phase of talent identification taking place at 10-12 years of age and involving easy to administer field tests. The second stage of talent identification would need to be carried out between the age 13-16 years of age and again this stage would involve easy to administer field tests. Those athletes that are ultimately selected would then be directed to elite junior programs for their particular sport. Peltola also emphasises that all athletes that are tested need to be encouraged to participate in sport, not just those that are selected for further development. There have also been variations of these formats employed in several countries, such as the German Democratic Republic (G.D.R), the Soviet Union (USSR) and China, over the last three decades (Baur 88, Jarver 81, Peltola 92, Thomson 85 and Wu 92).

Both Peltola (92) and Thomson et.al. (85) see the most effective talent identification schemes being tied to the school system similar to aspects of the G.D.R. program. Linking talent identification to the schooling system allows wide participation of all socio-economic groups, aids development of a wide range of motor skills. School involvement in talent identification also ensures people with at least some professional expertise are involved in talent identification and alleviates some of the cost which can be restrictive in the 90's (Thomson et.al.85).

For each sport that is conducting a talent identification program there needs to be an ideal accepted model for both the factors that influence sporting performance and talent identification that athletes and coaches can compare their own qualities with. With those athletes that resemble or are closer to the model being selected for elite junior programs (Bompa 85). These ideal models can be formulated by taking measurements of elite performances at events such as Olympic Games, world championships and other high level events (Bompa 85).

As mentioned before there have been, over the last 30 years, several countries that have gone to great lengths to run comprehensive talent identification programs. These countries include the G.D.R., the USSR, Romania and China. Probably the most well known and most talked about of these programs is the one undertaken in the G.D.R. In the 1972 Olympics alone quite a few G.D.R. medallists were scientifically selected (Bompa 85).

To someone living in many western countries the dimensions of the G.D.R talent identification program are quite staggering. The G.D.R. program was highly organised and structured. It included a compulsory program of physical education in schools, early identification of sports talent, a club system for talented individuals in separate sports. It also entailed continuity of selection and ruthless elimination of those that do not measure at each stage, a scientific approach to

elite performers training and long range objectives (Thomson et.al.85). Selected schools were obliged to support talent scouting with talented individuals being trained at training centers, of which there were 2000 that catered for approximately 70,000 young sports people. There was also a system of youth sport schools that were attached to a sport club at which only specific sport disciplines were trained. Approximately 9,000 young athletes were enrolled in 20 youth sport schools. There was also about 10,000 full-time coaches involved in the training of young athletes. Competition was separated into age groups. Substantial financial and material support was also provided (Kozel 1996).

A considerable amount of the G.D.R. success in track and field can be attributed to the attention that was given to the foundation and build-up phases of their identification program. The first phase, which was called the foundation training phase focused on greatly varied training in different sports and was usually completed in early childhood. The second phase known as build-up training began at 13-15 years and lasted between 4-6 years. This phase involved the participant beginning to specialise to a degree and also continuing varied training. It was hoped that the versatility encouraged in this phase would develop the ability to learn quickly and correct faults easier (Thomson et.al.85).

CONCLUSION

It is clear that talent identification is a diverse subject that is not easily summed up. There are many different views on what talent identification accomplishes and how it should be structured. While the resources needed to implement programs similar to those undertaken in the G.D.R. are not available to many countries in the 90's this does not mean that talent identification would not be worthwhile. By linking talent identification to the already existing school system results can still be achieved in talent identification.

At the same time talent identification programs need to be scientifically based and assessment should be continuous rather than being done once only in order to maximise a countries or individual sports return from its sporting resources.

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