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Methodological Bases for Talent Identification in Sports

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Abstract:

For a country to develop the high-performance sport, it is essential to have the human capital that has the qualities to become a champion. This feature does not guarantee success but offers more possibilities. There are many questions about how to select a sports talent and when to consider someone as a talent for a specific sport. For the development of this process, it is necessary to take into account that sports training is a pedagogical process of teaching and learning, governed by biological and pedagogical principles and laws. For identifying sports talents, there are different selection criteria: pedagogical, medical-biological, sociological and psychological. It is also important to comply with the methodological guidelines established for the development of the physical capacities of children, according to the different ages and periods of maturation. This article aims to reflect on the fundamental characteristics of the process of selection of talent and initiation of sports and thus provide information to sports coaches on how they can develop their work.

Keywords: sports talents, sports initiation, physical capacities

1. Introduction

Modern sport is characterized by the achievement of high marks and competitive results that years ago were believed impossible to achieve. The use of new technologies and modern methods of preparation have favored a sustained increase in sports results in almost all sports. The cost of the means and equipment necessary for the practice or development of competitive activity in some sports has increased the gap between wealthy and developing countries, which is reflected in Olympic and World Games medals.

The development of the high-performance athlete consists of several stages. The stage of first selection that oscillates between the 8 and 12 years. This is the initial phase and is very important in the orientation of the child. The stage of intermediate or puberty selection, from 13 to 16 years and the stage of final or decisive selection that goes from 17 to 19 years. In most sports, it is possible to identify these age periods with the selection phases that are attributed to them, although there are sports such as gymnastics and swimming in which the selection is earlier, and the stages are different. It is precisely the processes of selection and sports initiation that are addressed in this article. Analyzing the main characteristics that they possess in the context of the current sport and its importance in the way towards high sports achievements.

2. Discussion

The word Talent, "in Latin talentum and Greek tálaton, is recognized as the ability to obtain remarkable results with the exercise of intelligence, ability or aptitude for a certain thing" (Pila, 2003). For Bohme (1994) "sports talent is a denomination of a person of which it is accepted that it possesses a special aptitude for the sports performance, based on its behaviour, aptitudes or based on its inherited and acquired behavioural conditions" (Pila, 2003).

Another renowned author such as Zatsiorskij argued that sports talent is characterized by a combination of motor and psychological abilities as well as anatomo-physiological skills, which together create the potential for achieving high sports results in a particular sport. (Zatsiorskij, 1989)

When reviewing the specialized literature, it is possible to find several concepts about being a talent in sports. The majority agrees that there are individuals whose physical and psychic characteristics place them above the rest of the population regarding possibilities for successful development in sport. It is important to note that a child can be considered a talent for a sport or group of sports but not for everyone. Especially as the child grows and matures and goes specializing in a sport, his chances of success in other sports are reduced to a pitch of smaller possibilities.

When the child starts in the practice of the sport, the coach must be clear of the importance of the multilateral training of the boy. The capacities must be developed in such a way that they do not accelerate the process and fall into an early specialization that conspires against their health and limits their sporting life. It is necessary to know the characteristics of the phases to select and apply the appropriate methods and loads in training with children.

A very repeated error in the areas of sports initiation is to think on the part of the trainer that a child is a miniature adult and then they can use with them the same systems and methods of preparation as with adults. Nothing is further from reality. The training with children must possess a high component of games that favor the motivation and the permanent interest towards the sport. Also, their organism is still in development, and the different systems are not able to tolerate the physical and psychic loads that tolerate the adults.

2.1. Ways for the Selection of Sport Talents

Talent selection can be classified into two main ways or three when they are combined. One way is the natural selection method. The children practice the sport, and as they compete, the winners are selected. These are advancing to higher stages of training with new trainers in schools and specialized academies. This method has the advantage that the expense of resources is lower. However, it has the disadvantage that can leave out children who for different reasons, which we will see later, at that time did not have the best results but possesses the characteristics that will enable the creation of true future champions.

The other method is the scientific way of selection. This is supported by the explicit knowledge of several sciences that study sports development such as Psychology, Pedagogy, Sociology, medical-biological sciences such as Sports Medicine, Physiology, Biochemistry, among others.

Here are several criteria that should be taken into account in the selection of talents from the perspective of some of these sciences.

a) Pedagogical criteria for the selection of sports talents:

- Level of development of physical qualities.
- Level of development of the technical-tactical preparation.
- The rhythm of growth of sports performance.
- Coordinative possibilities.

Several pedagogical tests allow the selection of individuals with particular characteristics for the sports practice. An example of tests is those used in Cuban Physical Education. Several of the physical tests that are applied in the different degrees have norms elaborated from representative samples of the Cuban population of that age. These norms establish percentiles, which allow classifying the children that are evaluated according to the result that reaches in each test, establishing then in which group of possibilities are for the practice of a sport or group of sports. For the base coach, it is essential to keep a record of the performances that their athletes are experiencing, analyzing their growth rhythms in relation to their maturation.

b) Medical-biological criteria for the selection of sports talents:

- Health status of the athlete.
- Biological age.
- Morphofunctional characters.
- The individual peculiarities of the superior nervous activity.

This other set of criteria are also of great importance. Children are often discarded for inferior performances to those of their peers and later achieve results superior to those that at another time were considered talents. The difference between chronological age and biological age must be taken into account. A child may have advanced biological development if his biological age is higher than chronological age, or it may be behind if its chronological age is superior to the biological one. It would not be strange to find a 12-year-old whose biological age is 14 years or older. Therefore, the results of this child will be superior to those of his peers at that time, but it is possible that when they reach him in development, his results will be the same or even lower. It also happens that a child is 15 years old and has a biological age of 13 years. This one will have inferior results to the majority of its companions but only during the time that he takes to reach them.

Another of the most frequent errors is to consider the tall boys as slow and slow and to discard them in favor of smaller children but with more developed possibilities co-ordinates. Growth is not a continuous process; it is rather a process of stages characterized by periods of stability and periods of growth. When the child experiences an increase in his body dimensions the nervous system needs time to adapt to mobilize these new dimensions, the adaptation is not done at the moment. On the other hand, the greater the dimensions of a child, the more difficult it will be for his muscular system to mobilize the limbs. This characteristic affects the efficiency in motor coordination, but this affectation is temporary. In many sports, where previously short athletes were chosen for considering more explosive, today we work with players of more stature since it is demonstrated that with a properly structured training, we obtain similar and superior results.

Another important element to consider is that development in children is determined by genetic inheritance and the influence of the external environment. Table 1 shows the average growth of chronological age children. It is necessary to point out that this is a population mean, in particular cases, it may be higher or lower, but in most cases, it coincides.

Age	Boys	Girls
1	17,6	14,62
2	9,80	10,00
3	7,86	7,90
4	7,00	7,11
5	6,40	6,52
6	6,20	6,21
7	5,87	5,90
8	5,58	5,51
9	5,09	4,80
10	4,60	5,30
11	4,64	6,51
12	5,16	6,40
13	7,20	4,30
14	7,55	2,20

Table 1: Speed of growth (cm/year)

Another interesting fact training children is the average percentage of muscle mass according to age and sex. This indicator is closely linked to the subjects' ability to train. Table 2 shows the mean values by sex.

AGE (YEARS)	MEN (%)	WOMEN (%)
5	42	40,2
7	42,5	46,6
9	45,9	42,2
11	45,9	44,2
13	46,2	43,1
13,5	50,2	45,5
15	50,3	43,2
15,5	50,6	44,2
17	52,6	42
17,5	53,6	42,5
20-29	51,5	39,9

Table 2: Percentage of muscular mass related to the body weight

c) Psychological criteria for the selection of sports talents:

They include the indexes that reflect the possibilities of perfecting the different psychic qualities according to the sports requirements.

- Character characteristics.
- Special features of temperament.
- Motivational Sphere.
- Managing competitive stress.
- Development of the volitional sphere.
- Interpersonal or group relationships.
- The concentration of attention.
- Perception of distance.

Psychological characteristics are critical elements in the treatment of individual differences of young athletes in the training process. Let's take an example. Temperament is a characteristic that is determined genetically; it is not modified, it always remains the same and influences our behaviour and our reaction to the environmental stimuli to which we are subjected. The pressure exerted by sports on children and adolescents will provoke reactions that will vary depending on their temperament.

The criteria mentioned above must be taken into account by sports teachers for their control and development during preparation. In many cases, these characteristics make the difference between victory and defeat. The sport requires dominating the stress that the competition causes, as the challenges and goals increase the stress will be higher. Many children prefer to compete where their family members can watch them play.

However, others prefer to do it from visitors because being in sight of their parents (for example) adds extra pressure. An element closely related to the above is the concentration of attention. The athlete must be able to withstand the influence of the environment that prevents him from being focused on the activity in question.

If the sport practiced is a team sport, the group interrelation becomes very important. As the players understand and relate better, the performance will be better. There are sports where the perception of the distance is relevant for the sports action. Imagine a baseball

pitcher who does not correctly perceive how far away the glove from the receiver is. No matter how hard the pitcher tries, the pitches will go out of the zone.

d) Sociological criteria for the selection of sports talents:

- The reasons.
- Interest.
- The demands.

These criteria are usually the least taken into account by coaches; however, they have tremendous importance. If the athlete has no real interest in training and achieving results in the sport, if he does not trust the criteria and suggestion of his coach, it is complicated to obtain satisfactory results. The way a child behaves is a reflection of the environment around him, and this will determine the emotional reactions that the child will experience during training and competition.

Often too much pressure is exerted on the children to win, which affects them psychically and physically. Training units are developed that lack joy and distraction, causing demotivation and loss of interest. In many cases, children participate in sports they do not like but practice them because of family influence and a kind of compensatory satisfaction from parents.

The home environment, mass media, traditions are factors that condition the choice of one or another sport by children and should not escape from the coach's view. The ideal is to have a record that characterizes each child in its evolution, not only physically and in its sports results, but also psychically and sociologically. There are many tools available to professionals working in the sports areas, and in other cases, they may ask the help of a specialist. The more control the coach has over the training process, the better he can work, and the chances of success will increase.

2.2. Necessary methodological criteria to keep in mind during the sport initiation

During sports initiation, other criteria such as maturation, growth and muscle development must also be taken into account. For example:

- Muscle mass in children is lower than in adults.
- During growth, muscle mass and strength increase rapidly.
- The amount of muscle energy reserves is lower than in adults.
- At puberty, the number of slow contraction fibers (st) increases significantly. In boys, 73% and girls 64%.
- Increased length and thickness of muscle fibers.
- Improvement of the biochemical processes in the cellular metabolism.
- Increased strength at the site of insertion of ligaments and tendons with bones.

Methodological bases for the training of aerobic endurance.

- Use the continuous working method.
- Use the run in its various forms.
- Avoid running on hard and uneven surfaces.
- Prioritize in the dosage of the run, the volume variation and then the intensity.
- The intensity of endurance work must be controlled until puberty or advanced organic maturation.

Methodological bases for the training of the anaerobic endurance

- For their training loads of speed and explosive strength are applied.
- They are necessary pauses of complete recovery.
- The anaerobic performance of children improves with age and level of physical development.
- The training above the anaerobic level should be avoided as much as possible before the puberty (11 - 13 years).
- The possibilities of training of this capacity with children have a direct relationship with the level of reached organic maturation (skeletal age, biological age, and sexual development).

Methodological bases for the training of the strength

- Before the 10 years, the work of strength does not have significant repercussions.
- After the 10 years, one can work the quick strength with children.
- To the 12 years, there are evident and beneficial effects of strength.
- Starting from the 15 - 16 years can begin something intense work with overload.
- In inferior ages to the 15 years, the work should be carried out with the own weight or light loads.
- Before the 15 years, the training goes directed to the general preparation and the teaching of the technique.

Methodological bases for the training of the speed

- The possibilities of training do not differ of those of the adult.
- Between 8-11 years the movement frequency increases.
- To the 9-10 years, the biggest frequency of steps is reached.

- To the 15-16 years, the longitude increases, and it diminishes the frequency of steps.
- Between the 8-11 years should be included exercises that increase the movement frequency and the coordination.
- From the 12-15 years besides the coordination, to include the initial work of muscular strength (power) and flexibility.

Methodological bases for the development of the flexibility

- It is very favorable in small ages starting from the 6 years.
- To train with a weekly frequency from 2 to 3 times.
- The best ages for the work of the flexibility are between the 11 and 14 years.
- The girls have bigger movement width after the 10 years.
- The joins of the children should not be forced to extreme positions.

Not to keep in mind these methodological indications brings errors in the methodology of sports training, of which the most frequent are:

- The children's premature specialization.
- Not to do an appropriate warm-up.
- Little systematization in training.
- A wrong teaching of the technique.
- Inadequate increase of the loads.
- A short time of recovery.

All these mistakes affect the process of sports formation, causing the loss of the time used in training and causing in many cases damages to the own sportsmen, that see their possibilities of a sports career are frustrated and even suffer affectations to their health.

3. Conclusions

The talents selection and sports initiation are important processes in the formation of the sportsmen of high performance. To apply the knowledge reached by the different sciences that study the sports training is vital if one wants to develop a process that leads to the success in the formation of an elite sportsman.

A boy is not an adult in miniature, to keep in mind his characteristics facilitates to use loads of training that don't conspire against his healthy and multilateral development.

There are methodological bases that coaches should take into account when developing physical abilities in children. Otherwise, they would limit the child's life in sports and even affect their health.

4. References

- Águila C., Andújar C. (2000) Reflexiones acerca del entrenamiento en la infancia y la selección de talentos deportivos. *EFdeportes*. Year 5. No. 21 (3 pages) Available from: www.efdeportes.com/efd21/talento [Accessed: 23 September, 2014].
- Año V. (2000). Planificación y organización del entrenamiento juvenil. *Gymnos*: Madrid. pp. 83-203.
- Bompa, Tudor O. (2004). *Periodización del Entrenamiento Deportivo: Programa para obtener el máximo rendimiento en 35 deportes*. España. Editorial Paidotribo. Colección Deporte y Entrenamiento. ISBN: 84-8019-488-X.
- Cañizares M. (2008). *La psicología en la actividad física*. Deportes: Havana. pp. 36-88.
- Fuentes M. (2006). *El temperamento en la formación del deportista*. Deportes: Havana. pp. 24-78.
- García M., Navarro M., Ruiz A. (1996). *Bases teóricas del entrenamiento deportivo: principios y aplicaciones*. *Gymnos*: Madrid. pp. 32-96
- García M., Navarro M., Ruiz A. (1996). *Planificación del entrenamiento deportivo*. *Gymnos*: Madrid. pp. 28-76
- García M., Navarro M., Ruiz A. (1996). *Pruebas para la valoración de la capacidad motriz en el deporte. Evaluación de la condición física*. *Gymnos*: Madrid. pp. 22-98.
- García U. (2004). *Herramientas psicológicas para entrenadores y deportistas*. Deportes: Havana. pp. 54-112.
- Gudrun F. (2003). *Esfuerzo físico y entrenamiento en niños y jóvenes*. Paidotribo: Madrid. pp. 78- 224.
- Leiva R. (2003). La selección de talentos deportivos. Criterios para asegurar su eficiencia. *EFdeportes*. Year 9. No. 61 (1 pages) Available from: www.efdeportes.com/efd61/talento.htm [Accessed: 23 September, 2014].
- Mac. Dougal J. y otros. (2002). *Evaluación fisiológica del deportista*. Editorial Paidotribo. Colección Fitness. ISBN: 84-7509-816-9.
- Menéndez Castillo, Eduardo. (1985). *Planificación control y análisis del entrenamiento deportivo en las categorías escolares*. Editorial Abel Santamaría.
- Navarro S. (2007). *La iniciación deportiva y la planificación del entrenamiento*. Deportes: Havana. pp. 56-167.
- Pancorbo A. (2002). *Medicina del deporte y ciencias aplicadas al alto rendimiento y la salud*. Editora da Universidade do Caxias do Soul. Caxias do Soul. pp. 110-236.
- Pérez, I. (2007). *Evaluación del rendimiento competitivo en el béisbol. Ira Parte*. Portaldeportivo. Disponible en: <http://www.portaldeportivo.cl/larevista/>. ISSN: 0718-4921.

- xvii. Pérez, I. (2008). Evaluación del rendimiento competitivo en el béisbol. 2da Parte. Portaldeportivo. <http://www.portaldeportivo.cl/larevista/>. ISSN: 0718-4921.
- xviii. Pila, H. (2003). Selección de talentos para la iniciación deportiva. Una experiencia cubana. Havana. Editorial Deportes.
- xix. Pila, H. (2003). Selección de talentos para el deporte, 27 Años de experiencia en Cuba, EFdeportes. Buenos Aires, Year 9, #62, July. http://www.efdeportes.com/efd62_talento.htm
- xx. Pila, H. (2003). Selección de talentos para el deporte, 27 años de experiencia en Cuba, metodología de las pruebas. EFdeportes. Buenos Aires, Year 9, #65, October, <http://www.efdeportes.com/efd65/talento.htm>
- xxi. Pila, H. (2004). Selección de talentos para el deporte, 27 años de experiencia en Cuba, metodología para evaluar las pruebas. EFdeportes. Buenos Aires, Year 10, #69, February. <http://www.efdeportes.com/efd69/talento.htm>
- xxii. Pila, H. (2005). Selección de talentos para el deporte, 27 años de experiencia en Cuba, Metodología para evaluar las pruebas en deportes de fuerza rápida y resistencia. EFdeportes. Buenos Aires, Year 10, #81, February <http://www.efdeportes.com/efd81/talento.htm>
- xxiii. Sampredo, Javier. (2001). Fundamentos de Táctica Deportiva. Análisis de la Estrategia de los Deportes. Editorial Gymnos. ISBN: 84 – 8013 – 0216 – 7.
- xxiv. Verkhoshansky Y., Zif M. (2000). SuperEntrenamiento. Paidotribo: Madrid. pp. 124-198.
- xxv. Volkov V., Filin V. (1988). Selección deportiva. Moscú. Vneshtorgizdat: pp. 34- 94
- xxvi. Zaldivar B. (2011). ¿Qué se Entrena? Bases fisiológicas de la adaptación al entrenamiento deportivo. Havana. Deportes. pp. 37-142.
- xxvii. Zatsiorskij, V. (1988). Biomecánica de los Ejercicios Físicos. Havana. Editorial Pueblo y Educación.
- xxviii. Zatsiorskij, V. (1989). Metrología Deportiva. Moscú. Editorial Planeta.