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Theoretical conception for the improvement of wrestling coaches in talent selection

[Concepción teórica para la superación de los entrenadores de lucha en la selección de talentos]

[Concepcao teorica para o aprimoramiento de treinadores de luta na selecao de talentos]

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ABSTRACT

Introduction: The improvement of sport at a global level means that current training systems are becoming outdated with respect to the needs of society.

Objective: A theoretical framework was designed for the professional development of school wrestling coaches, in the selection of sports talent, with the use of dermatoglyphs, in the province of Camagüey.

Materials and methods: Theoretical methods such as document analysis, analytical-synthetic methods, and induction-deduction were used, as well as empirical methods such as a survey of coaches, interviews with methodologists, a professional performance test, and methodological triangulation. The sample consisted of 26 wrestling coaches from the province, representing 100% of the population participating in school events, selected intentionally.

Results: These were obtained through methodological triangulation. In this case, the surveys conducted with methodologists and wrestling coaches were compared with the professional performance assessment conducted through classroom observation. It was found that the training of graduates includes talent selection from a general perspective, based on criteria established several years ago, and therefore these criteria have been updated.

Conclusion: Through its application, it was determined that the coaches are in a better position to develop the process. This new concept allowed the group to be guided in the search for information and helped to share experiences of sporting talent.

Keywords: professional development, coaches, talent selection.

RESUMEN

Introducción: el perfeccionamiento del deporte a nivel global trae consigo que los sistemas formativos actuales están quedando desfasados con respecto a las necesidades de la sociedad.

Objetivo: se diseñó una concepción teórica para la superación profesional de los entrenadores de lucha libre escolar, en la selección del talento deportivo, con el uso de los dermatoglifos, en la provincia Camagüey.

Materiales y métodos: se emplearon métodos del nivel teórico como análisis de documentos, el analítico-sintético, la inducción-deducción, métodos empíricos como encuesta a entrenadores, entrevistas a metodólogos, prueba de desempeño profesional y triangulación metodológica. Se tomaron como muestra 26 entrenadores de lucha de la

provincia, que representan el 100% de su población participante en los eventos escolares de manera intencional.

Resultados: se realizan a partir de la triangulación metodológica. En este caso, se contrastan las encuestas realizadas a los metodólogos y a los entrenadores de lucha, así como la prueba de desempeño profesional mediante la observación a clases. Se pudo constatar que en la formación de los egresados se prevé como contenido la selección de talentos desde una óptica general, desde criterios planteados hace varios años, por lo que son criterios que han sido renovados.

Conclusión: con su aplicación se pudo determinar que los entrenadores están en mejores condiciones para desarrollar el proceso. Esta nueva concepción permitió orientar al grupo en la búsqueda de la información y ayudar a compartir experiencias del talento deportivo.

Palabras clave: superación profesional, entrenadores, selección del talento.

RESUMO

Introdução: A melhoria do desporto a nível global significa que os actuais sistemas de treino estão a ficar desactualizadas em relação às necessidades da sociedade.

Objetivo: Foi desenhada uma concepção teórica para o aperfeiçoamento profissional de treinadores escolares de luta livre, na seleção de talentos esportivos com o uso de dermatóglifos, na província de Camagüey.

Materiales métodos: foram utilizados métodos de nível teórico como análise documental, analítico-sintético, indução-dedução, métodos empíricos como levantamento de treinadores, testes de desempenho profissional e triangulação metodológica.

Resultado: a organização respondeu aos resultados do diagnóstico, confirmando a necessidade de incluir esse conhecimento nos conteúdos do curso, devendo ser contextualizado às necessidades dos profissionais.

Conclusões: O aprimoramento permitiu que o grupo se orientasse na busca de informações e ajudasse no compartilhamento de experiências de talentos esportivos. Com a sua aplicação constatou-se que os treinadores estão em melhores condições para desenvolver o processo de seleção de talentos desportivos.

Palavras-chave: desenvolvimento profissional, treinadores, seleção de talentos.

INTRODUCTION

In Cuba, research on talent selection in different sports and contexts values various selection criteria and agrees that important elements for the selection and development of athletic talent include those derived from the environment's influence on the athlete's body, as well as those stemming from their genetic potential. However, selection processes often consider only phenotypic characteristics, which are highly variable due to their dependence on maturation factors and sex. In this sport, selection is essential, as cited in Noa (2007). They consider that the movements produced by the athlete are fundamentally characterized by speed and strength; technical-tactical actions are hampered by the opponent's active resistance and a complex set of displacements and offensive and defensive actions. Therefore, the athlete's success depends on their ability to correctly and promptly assess the opponent's behavior, which is crucial during sporting competitions. The proposed conception is based on talent selection, research such as that by Lastre (2020), Villamarín and Zaldívar (2020), and Lastres, Sánchez, and Mesa (2022), which examines the interaction of biological, psychological, and social variables, and the use of dermatoglyphic analysis, as highlighted by authors such as Tamarit (2021), Armenteros (2021), Chagas (2021, 2023), and Fernández (2023).

It is also based on criteria such as Pancorbo (2008), which considers success in high-performance sport as an adequate relationship between training and biological recovery mechanisms, associated with the athlete's genetic endowment, in the laws and principles

of general didactics and the system of principles that govern the process of organization and development of the improvement of human resources in Physical Culture and Sport.

On the other hand, Madrigal (2020) proposes a methodological framework for developing a scientific model for talent selection in combat sports. Maceo and Muñoz (2021) address methods for assessing genetic potential in the selection of sports talent. Currently, professional development is stipulated according to Resolution No. 140 of the Postgraduate Education Regulations issued by the Legal Department of the Ministry of Higher Education. Regarding this topic, there are contributions from researchers in Cuba on the professional development process, as has been verified; these include Cala and Breijo (2020), and Ferrer, Cardoso, and Domínguez (2024). Works by authors such as Cardoso, Valdez, and Panesso (2022) were also found in the development of professional development projects based on Advanced Education.

Continuing education is conceived as a process to enhance the quality of professional development, based on Decree Law 372/2019 of the National System of Scientific Degrees. According to Capote (2011), a theoretical conception is a system of ideas, concepts, and representations about an object. The systemic nature of theoretical conceptions means that they combine conceptual elements with the characteristics of the objects or phenomena they represent; therefore, the study of interactions between the parts and between these parts and the environment is placed at the forefront. The researcher's position: The term "professional development" refers to the set of teaching and learning processes that enable university graduates to acquire and continuously improve the knowledge and skills required for better performance of their responsibilities and job functions, according to the glossary of terms in advanced education (2010). This term is increasingly used in the country to support academic work. This leads us to propose the need to develop a theoretical conception of professional development for coaches based on advanced education, using the dermatoglyphic profile of the most outstanding athletes in this sport. The professional development process for school wrestling coaches demands a multifactorial approach, addressing each of the necessary factors, approaches, and criteria. Furthermore, it

requires a system of general and integrative elements that represent its functioning and specificity, in the form of its dimensions, in order to achieve greater efficiency in their work. This requires developing their thinking through learning management and self-improvement in the areas that limit their actions. It is based on psychology: on the process of improvement based on the historical-cultural theory of Vygotsky (1987) and his collaborators, on the zone of proximal development, on the law of the double formation of higher psychological processes , posing as the objective of the research "To design a theoretical conception for the professional improvement of school wrestling coaches in the selection of sports talent with the use of dermatoglyphs in the province of Camagüey."

MATERIALS AND METHODS

The research was conducted in Camagüey province, a province with a long history of success in this sport, but which, in recent years, has fallen short of expectations. The initial assessment was based on the dimensions proposed by Valcárcel and Pérez (2012). The sample consisted of 26 wrestling coaches from the province, representing 100% of the participants in provincial school-level events. Methodologists from the high-performance subsystem were also included in the research sample.

Once the results of the instruments applied in verifying the problem, the surveys carried out on the methodologists and the wrestling coaches, as well as the professional performance test through observation of classes and based on the principle of validity, in order to find possible coincidences and discrepancies that allow us to arrive at more complete conclusions of the diagnostic process, its methodological triangulation is carried out.

RESULTS

The following information was collected for the evaluated items of each indicator across the three dimensions: in the cognitive and instrumental dimension, 38.4% were rated as acceptable, while 61.53% showed some deficiencies or were rated as deficient, demonstrating a lack of knowledge and skills to carry out the sports selection process. These results indicate that, although they do not possess the knowledge corresponding to contemporary trends in different areas of knowledge—what to teach? and skills, comprised of practical instrumental references—what to know how to do? From a procedural standpoint, to adequately carry out the talent selection process, they have a more developed level in terms of their attitudes, where, in general, the average of those evaluated as acceptable is 73%, supported by processes of reflection, predisposition, and norms of interest, in the attitudinal dimension.

Regarding professional development, the following irregularities are presented:

- In determining the needs for professional development, it was found that the subjects taught in the Study Plan that governs the training of graduates include the selection of talent from a general perspective, but it addresses the content from criteria established in the 1980s and 1990s, which are criteria that have been updated by the advances in science and technology, and do not include methodologies or strategies based on dermatoglyphics due to the novelty of their application.
- Professional development centers do not consider the context in which professionals work, and although they begin with an assessment of teachers' actual needs, the professional development of coaches in the talent selection process is not a priority, resulting in deficiencies in both theoretical and practical knowledge. The main strength lies in the recognition by methodologists and coaches of the need for professional development opportunities on this topic.

DISCUSSION

To address the problem raised, the author designed an interdisciplinary theoretical framework for wrestling coaches in professional development for talent selection using dermatoglyphics, which he presents with the following rationale.

The professional development process for school wrestling coaches demands an interdisciplinary and multifactorial approach, given the need to address each of the factors, approaches, and criteria involved. Furthermore, it requires a system of general and integrative elements that represent its functioning and specificity, in the form of its dimensions, in order to achieve greater efficiency in their work. This requires developing their thinking through learning management and self-improvement in the areas that limit their actions. The author begins by recognizing the interdisciplinary nature of the entire process.

By establishing a comparison between the contributions of researchers in Cuba on the improvement process, it was observed that they develop proposals that contribute to the permanent improvement of the professional, but none of them address the topic discussed.

The theoretical foundations for improvement, continuous and permanent training are constituted by Advanced Education, based on Cuban pedagogical conceptions that aspire to achieve unity between instruction, education and development in human resources (Figure 1).

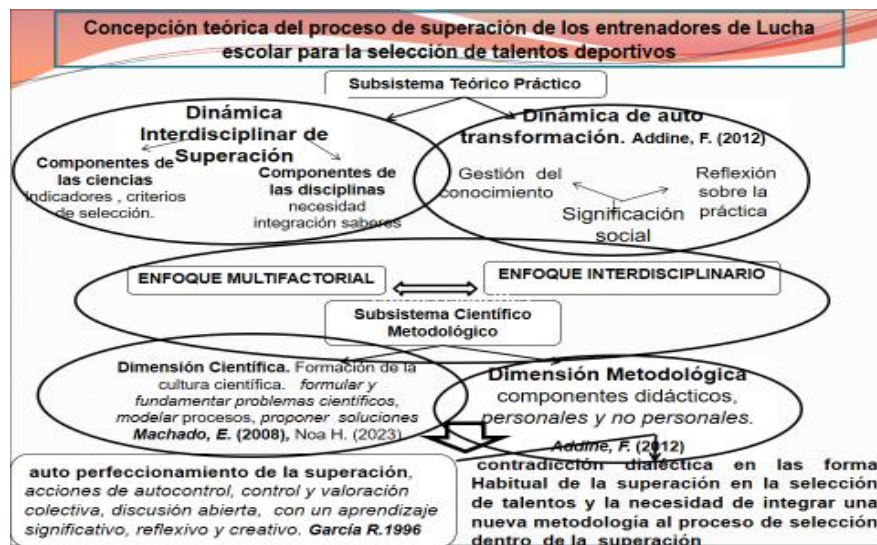


Fig. 1. - Theoretical conception of the process of improvement of school wrestling coaches for the selection of sports talents

From this point of view, the object of study has been broadened and diversified, allowing the determination of performance predisposition according to basic physical qualities through fingerprint analysis, advancing the anthropological study of culture and society, which allows coaches to expand their theoretical, methodological, and interdisciplinary knowledge for the development of this process.

The systems approach constitutes a methodological orientation in science. From an open systems perspective, the author conceives it as a dynamic, integrated (dialectical) relationship with its environment, where the coach receives the content from the cognitive aspect, which he applies in practice and transforms through the instrumental aspect, contributing results that take place within him (the attitudinal aspect) that cause impacts on the athletes and their environment. In this systemic cycle, the content becomes meaningful learning.

The precise conception of a support, which contributes to perfecting the work in the improvement, is structured two subsystems, based on two interrelated units, (theoretical-practical and scientific-methodological) that respond to this need and in accordance with the criterion expressed by the leaders of advanced education where the

role of the systems for the structure of this model is recognized, which can be considered as subsystems of that totality.

The theoretical-practical subsystem is composed of:

- The interdisciplinary dynamics of the overcoming process.
- The coach's self-training for improvement.

In the sphere of knowledge, discipline is a category that expresses the organization of scientific knowledge; Something that distinguishes it is that a discipline can be based on one or more sciences, however, one science does not allow answering several disciplines, in this case the interdisciplinary approach of this process is justified, by allowing enrichment from several sciences and in turn responding to the multifactorial nature of the proposal.

The process of improvement is the dialectical relationship established between the scientific component and the disciplinary component, which, in turn, constitutes the scientific platform of the interdisciplinary and therefore multifactorial approach to the process of improvement. This approach responds to the various disciplines whose content is directed towards the selection criteria, indicators, and factors. For the author, this approach is necessary, emerging as an indispensable quality of the theory of Advanced Education, addressing the cognitive need demanded by talent selection.

The coach's self-transformation process

The coach's self-transformation process, as a component of professional development, is realized through the personal, social, and professional management that develops within the individual as a result of collective action. This is manifested in the cognitive dimension of professional performance and is not limited to the relationship between the content and the student during the activity; it is also determined by the social significance that content holds for the group within its social relationships.

Self-transformation, as a subsystem, is made up of three components related to this process: achieving the learning of this new knowledge related to the cognitive dimension, developing skills related to learning the techniques for taking dermatoglyphic prints and their statistical processing, and thus being able to direct and organize the process from the training class.

The scientific-methodological subsystem is composed of:

- Component of the scientific dimension.
- Component of the methodological dimension of self-improvement.

Component of the scientific dimension

Scientific training emerges in this process as an expression of the sports coach's potential to use scientific knowledge to solve problems that arise in their field of talent selection for sports. Along the same lines, Noa (2023) states that today it is impossible to think about achieving sporting results without the use of scientific and technological advances, and therefore it is incumbent upon sports coaches to recognize the need to continuously raise their professional level.

Component of the methodological dimension of self-improvement

This component bases its dynamics on the action of the teaching-learning process considered as a self-improvement process that presupposes the change of the coach focused on the mastery and deep understanding of the purposes and nature of his professional performance, including the mechanisms that facilitate his systematic change and his self-analysis.

As part of the unique nature of the process, these relationships occur between the coaches involved in the improvement process, that is, coach-coach and coach-advisor. The non-personal components of the process are taken into account, such as the objectives, content, methods, means, organizational forms, and evaluation. The indispensable relationship between the personalized components of the preparation

process is also considered, giving it a humanistic character, by considering the coach who is improving as an active and conscious subject in the interaction with others.

All of this will lead to their personal development and the improvement of their pedagogical practice from the role they play within the group, which refines its actions through professional development and methodological work. From this perspective, a unity is established between instruction, education, and development, and efforts are made to enhance not only the "zone of proximal development of each student" but also to act upon the "zone of potential development of the group," Zilberstein (1995).

The methodological approach achieves its disciplinary realization through the projection of collective and individual interaction. This requires the development of intervention projects tailored to diverse contexts and differentiated attention. This vision is characterized by its impact on self-preparation at both the individual and collective levels. It synthesizes the pathways and resources that will be used to integrate content and cross-cutting themes, giving a systemic, comprehensive, and interdisciplinary character to the professional development process for coaches.

Methodologically, it is essential to use active methods for teaching dermatoglyphics as a method for selecting sports talent. These methods constitute the internal organization of the process, with a tendency towards participatory instruction, through the use of teaching and learning methods that include the creation of spaces for research, investigation, and knowledge management, which responds to the demands of professional performance.

Where it meets the following methodological requirements:

- Establish study guides for self-directed improvement with methodological indications for developing the content, as well as self-assessment questions.
- Establish steps for course participants to take ownership of the content, starting with a bibliographic review through questions that lead to the solution of a practical problem.

- The location of the bibliographic material required for the development of the improvement process, through the different forms of Advanced Education determined.
- To provide an instrument (observation guide) to assess skills, training, and various factors.
- Provide a virtual tool with videos and slides on the application of this innovative method.
- Regarding the methods to be used in improvement, it is recommended to use the joint development method, where the specialist and the coach participate together in the development of knowledge.

The evaluation of the theoretical concept of improvement oriented to school wrestling coaches in the talent selection process was carried out from the methodological steps issued by Crespo, T. (2009) where after the processing of data through the software developed with the help of the cumulative frequency tables, sum of cumulative frequency, cumulative relative frequency, image of the relative frequency in the normal distribution function and cut points reaching a concordance index of 0.85 in its relevance and applicability.

The results of expert opinions regarding the aspects that evaluate the theoretical conception of professional development revealed that the aspect related to the theoretical argumentation of the process was considered very adequate by 96.3% of the selected experts. Furthermore, a pilot study was conducted implementing the conception in a professional development program with coaches, who reported a significant improvement in their understanding of talent indicators at the Camagüey sports initiation school.

The design developed demonstrates a dialectical relationship of dependence and subordination between the two subsystems and their components, as they are indispensable for implementing actions based on the professional development needs of wrestling coaches. This is expressed through the evaluation and feedback of each

subsystem and its components, allowing for adjustments or refinements in its implementation.

The organization of professional development activities by levels responds to the results obtained in the diagnostic assessment. It proposes to work on these activities at three levels: the basic theoretical level, which is the solid, broad foundation built upon the graduate's terminal profile and provides supplementary information not received during their initial training or whose level of assimilation proved insufficient; the specialization level, which is defined by the individual needs of the student and their interaction with the work environment (scientific-technical, productive, and cultural) and is responsible for updating knowledge according to the professional's work profile, preparing them for new tasks; and the systematization level, which aims to integrate the content addressed from a theoretical and methodological perspective in the previous levels, as well as its contextualization within sports training.

CONCLUSIONS

Applying a new theoretical conception in the improvement that fills the existing gaps is done by the results of the diagnosis that denotes in general, the predominance of insufficient knowledge and skills for the determination of dermatoglyphs as a method for the selection of sports talents by the coaches of school wrestling.

The theoretical basis of professional development as a product has been developed through a conception from interdisciplinary and multifactorial approaches, which has a foundation, a theoretical-practical subsystem, as well as a scientific- methodological subsystem in which the theoretical contributions of this research are explicitly presented.

Advanced Education, as the theoretical basis of this concept, provides the guidelines and tools for updating and improving the performance of professionals, eradicating shortcomings in undergraduate training, and completing the knowledge and skills not

acquired, which are necessary for satisfactory professional performance in accordance with the development of current science and technology.

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Conflict of interest:

The authors declare no conflicts of interest.

Authors' contribution:

The authors have participated in the writing of the work and analysis of the documents.



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