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Proposal of indicators for basketball sports selection at the ages of 10-12 years

[*Propuesta de indicadores para la selección deportiva al baloncesto en las edades de 10-12 años*]

[*Proposta de indicadores para seleção esportiva de basquetebol na faixa etária de 10 a 12 anos*]

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ABSTRACT

Introduction: The research addresses the existing problem related to the insufficient use of methods, means and indicators for basketball sports selection at the base level.

Objective: to propose indicators for sports selection in basketball in the province of Cienfuegos in the 10-12 years old age group.

Material and methods: theoretical and practical methods were used that contributed to the compilation of the indicators used for this process and for the elaboration and validation of the proposal made. The sample included basketball coaches from the base level, with significant results and experience in the work, as well as Physical Education teachers and coaches with experience.

Results: The proposal gathers indicators for selection such as physical, physiological, psychological, social context and technical aspects based on the characteristics of these ages and the objectives for elementary schools, including the family and the Physical Education teacher. In the consultation with the specialists, of the six indicators analyzed and validated, four were very adequate for 66.6% and two were quite adequate for 33.3%.

Conclusions: It was demonstrated from the theory the correct proposed design, as well as that the proposal of indicators provides the coaches at the base level with an appropriate tool for the selection of talents in the province for the sport of basketball in the indicated ages.

Keywords: basketball, indicators, sports selection.

RESUMEN

Introducción: la investigación aborda la problemática existente relacionada con la insuficiente utilización de métodos, medios e indicadores para la selección deportiva al baloncesto en el eslabón de base.

Objetivo: proponer indicadores para la selección deportiva al baloncesto en la provincia de Cienfuegos en las edades de 10-12 años.



Material y métodos: se utilizaron métodos teóricos y prácticos que contribuyeron a la recopilación de los indicadores utilizados para este proceso y para la elaboración y validación de la propuesta realizada. Se tomó como muestra a entrenadores de baloncesto de la base, con resultados significativos y con experiencia en el trabajo, también a profesores de Educación Física y entrenadores con experiencia.

Resultados: la propuesta reúne indicadores para la selección como: aspectos físicos, fisiológicos, psicológicos, de contexto social y técnicos a partir de las características en estas edades y los objetivos para la educación primaria, incluyendo a la familia y al profesor de Educación Física. En la consulta con los especialistas, de los seis indicadores analizados y validados, cuatro se mostraron con categoría de muy adecuado para el 66.6 % y dos de bastante adecuado, para el 33.3 %.

Conclusiones: se demostró desde la teoría el correcto diseño propuesto, así como que la propuesta de indicadores aporta a los entrenadores en la base una herramienta apropiada para la selección de talentos en la provincia para el deporte de baloncesto en las edades señaladas.

Palabras clave: baloncesto, indicadores, selección deportiva.

RESUMO

Introdução: a pesquisa aborda o problema existente relacionado ao uso insuficiente de métodos, meios e indicadores para a seleção esportiva de basquete em nível de base.

Objetivo: propor indicadores para a equipe esportiva de basquete da província de Cienfuegos nas idades de 10 a 12 anos.

Material e métodos: foram utilizados métodos teóricos e práticos que contribuíram para a compilação dos indicadores utilizados para este processo e para a preparação e validação da proposta realizada. Foram tomados como amostra treinadores de basquete de base, com resultados significativos e com experiência profissional, bem como professores de Educação Física e treinadores experientes.

Resultados: a proposta reúne indicadores para seleção como: aspectos físicos, fisiológicos, psicológicos, contexto social e aspectos técnicos com base nas características dessas idades e nos objetivos para o ensino fundamental, incluindo a família e o



professor de Educação Física. Na consulta aos especialistas, dos seis indicadores analisados e validados, quatro se mostraram muito adequados para 66,6% e dois bastante adequados para 33,3 %.

Conclusões: demonstrou-se a partir da teoria o correto desenho proposto, bem como que a proposta de indicadores proporciona aos treinadores da base uma ferramenta adequada para a seleção de talentos na província para a modalidade basquete nas idades indicadas.

Palavras-chave: basquete, Indicadores, Seleção esportiva.

INTRODUCTION

The authors of international and national recognition linked to the topic of sports talent selection are obligatory references for the approach of the subject. Where sports selection is approached as a process, which must go through phases, stages or components, however, it is considered that it lacks a greater scope and comprehensiveness that guarantees the articulated and continuous nature of sports selection, from the initial identification of talent, until leaving the sports preparation system (Jiménez et al., 2021).

Therefore, it is necessary for the training of a high-level competitive athlete, the selection of talents, which aims to find the children and young people with the best capabilities for the successful practice of a sport. This selection resorts to a large number of tests and indicators that allow the search for talents in a more objective, reliable and valid way. Therefore, these tests are frequently grouped into biological components (anthropometric, growth and development), motor (evaluation of physical abilities), as well as, technique, learning capacity, sociological, psychological and biomechanical indicators (Villamarin and Zaldivar, 2022).

Nowadays, talent selection continues to be one of the most important aspects in the field of sports. There is a large volume of information, much of it contradictory, it is therefore essential to direct this process, so, as to contribute to the development and success in sport (Paredes and Pérez, 2019). However, when an analysis is made of the selection



systems, methods and models that are used in the world, a certain relationship between these is perceived, in the structure and sports organization of these.

In turn, in Cuba the sports selection process has been effective enough to show the world the excellent results achieved. However, it is considered that its efficiency is not so in the internal framework and specifically in provincial territories, since they are stages violated in this system and that are necessary to transit for the greatest use of the potentialities of talent (Isidoria *et al.*, 2018).

For the top management of the National Institute of Sports, Physical Education and Recreation (INDER by its acronym in Spanish) in Cuba, it is necessary to raise the quality of the training process in sports and Physical Education. Through the correct implementation of the high-performance pyramid, with broad sports participation at the base, together with the quality of the Physical Education class, which promotes an adequate system of identification and selection of potential sports talents (Vento, 2022).

Based on the different criteria issued above and agreeing with Palacio *et al.* (2019), it can be said that achieving quality and effectiveness in sports selection in the medium and long term can only be resolved if it is based on long and thorough comprehensive examinations designed and implemented on the basis of scientific methods. That is, with the application of science and technique, which allow assessing the subjects not only from anthropometric and technical values; but also, from the tactical, physical, medical, physiological, morphological and psychological point of view in order to detect the existence of comprehensive sports skills from increasingly early ages.

In this sense, detecting the determining factors for future performance in a given sport makes it possible to design indicators for sports search and selection from an early age (Morocho, 2022).

The selection of children with special aptitudes for the successful practice of sport is one of the most complex tasks facing ball sports today, due to the need to ensure the sports reserve for the next Olympic cycles. Therefore, given the particularities of the strengths, it is possible to mitigate the weaknesses and get ahead in the talent selection process



from the community in full relationship with the surrounding school institutions, with a view to receiving the collaboration of Physical Education teachers (Jiménez et al., 2021).

To this end, the Cuban Basketball Federation transits through the redesign of the Comprehensive Program for the Preparation of Athletes (PIPD by its acronym in Spanish). For the 2017-2020 period it was established the guidelines for achieving the objectives, listing and distributing the learning content, methods, means and work guidelines by category or age at all levels of action of the Cuban sports system. As well as normative tests and pedagogical tests which include: height measurement, long jump without momentum, reach: vertical jump, speed in 30 meters, planks, sit-ups, flexibility, aerobic and anaerobic resistance and technical tests.

It is considered that these tests are designed in a very general way and do not justify that the boy or girl selected may be a talent in the sport of basketball in the medium- or long-term future. In addition, it is necessary to use other indicators that characterize the game of basketball to be certain of selecting a future talent.

In the province of Cienfuegos, this selection has been carried out without obtaining results that contribute to success, using methods, procedures, indicators that are not supported by the application of science and the contributions of research on the subject. In order to promote the identification, detection and selection of potential boys and girls to the practice of basketball from the base to the high-performance centers, which has caused a decrease in the sport and an exodus to other sports with more relevance in the province.

Other factors are contributing to the province not being able to make progress in obtaining better results. For instance, the preparation of technicians from the base to the high-performance centers, the monitoring of athletes in different categories, the conditions in which they work at the base level, the experience of the base technicians, the plan for their improvement according to their needs.



The authors of this research consider that due to the importance of the selection and detection of talents at an early age that is taking place at the national and international level, as well as the need to have methods, indicators and procedures, it could be a starting point to eradicate some of the deficiencies that exist today. Leaving for other works, aspects that are still important in this process and that must go along with the scientific development of sport in Cuba.

Having stated the above arguments, we can state that the problematic situation addressed in the study is related to the existing deficiencies in the methods, indicators and procedures used for sports selection in basketball in the province of Cienfuegos in the 10-12 years old age group.

In order to respond to the research problem, the following objective is formulated: to propose indicators for basketball sports selection in the province of Cienfuegos in the 10-12 years old age group.

MATERIALS AND METHODS

A non-experimental research was developed, based on a descriptive design, where Physical Education teachers linked to basketball sport in their schools and basketball coaches were taken as a sample. In addition, it was reviewed the methodology of the Physical Efficiency Tests in these ages developed by the Department of Physical Education in the province and the contribution it provides to teachers and basketball coaches. The PIPD 2016-2020 elaborated by members of the National Sports Commission and works related to the subject carried out in the territory.

For the construction of the indicators, five basketball specialists were consulted and their preparation was carried out during the application of the Physical Efficiency Tests developed in the province (2021 and 2022) and during participation in provincial competitions for ages 11-12 years (April 2022). For the theoretical assessment, 11 teachers specialized in sports and sports training were taken. It was taken into account as a



criterion for their selection that they should have more than ten years of experience in the practice or in the teaching-learning process of basketball, they should be graduates of Higher Education, and they should have the desire and time to participate in the research. Was also taken into account their results in the profession.

The research was divided into three stages, which will be described below:

1st stage: the methods and procedures that have been used in the province for sports selection were determined, the technical strength of the sport was characterized and the people who participated in the research were selected, as well as their preparation. This stage lasted six weeks from January to February 2022.

2nd stage: based on the bibliographic study carried out at the national and international level, the indicators that may be included in the proposal are identified, in order to subsequently prepare the proposal of indicators for the sports selection for basketball in the ages of 10-12 years, which lasted eight weeks from March to May 2022.

3rd stage: finally, the proposal of indicators was presented to the group of selected specialists for its theoretical evaluation and it is determined according to the criteria issued which ones should be part of the basketball sports selection for 10-12 years olds in Cienfuegos, it had a duration of 10 weeks between July and October 2022.

Statistical methods and techniques used

Theoretical methods facilitate the gnoseological activity in research in order to explain the facts, interpret the empirically obtained data, introduce us to the essential relationships and fundamental qualities of the processes that are not directly observable, establish the most important regularities of the functioning and development of the processes and objects of the research. As well as, the elaboration of the conceptual apparatus in an orderly manner in correspondence with the logical development of the object and finally develop theories.



In the case of this study, its use began from the moment in which concern arose about the problematic situation regarding how the sports selection process was developed by coaches in the province and the way in which the trainees arrive at the area or the Sports Initiation Schools (EIDE by its acronym in Spanish). As well as the search for background and bibliographic material regarding the subject that allowed refining the research problem, establishing the most appropriate research design and the information collection instruments until the results were obtained. The following were used:

- Historical-logical: it allowed the search for the foundations that preceded the scientific problem addressed, the historical results obtained, their development, significance and their impact on current results.
- Analytical-synthetic: it was used during the process of consulting the literature, specialized documentation and in the application of other methods of scientific knowledge.
- Inductive-deductive: it facilitated the interpretation of the empirical data, as well as discovering important regularities and relationships between the different components of the research.

In turn, the empirical or practical methods allowed the correct interconnection between the cognitive activity, the object and the result of the research, the collection of the largest amount of data that facilitated achieving the objective of the research and the theoretical assessment by specialists. Used for this purpose:

- Documentary analysis: provided an in-depth study and analysis of the subject of research and the documents that govern and regulate the activities carried out by coaches at the base level for sports selection.
- Indirect unstructured observation: allowed personalized observation and direct performance of the process. This method was selected due to the lack of a structured guide for observing student performance and the need to capture everything potentially relevant in the treatment of the subject. This type of observation allows to observers, based on their accumulated experience (more than 10 years), maintaining freedom of movement and distance from the



phenomenon from the people observed, to make a consensual evaluation when awarding the score, reflecting and reaching an understanding of the aspects observed.

- Survey: A questionnaire was used to determine the characteristics of the process, its development and elements of importance for the surveyed.
- Interview with managers: to learn about indications, preparation, and guidance given to coaches for the development of the sports selection process for basketball at the 10–12-year school stage.
- Specialist criterion: this made it possible to verify the validity of the proposal under study through the theoretical assessment of a group of specialists in the sport of basketball.

Within the statistical and mathematical methods: empirical frequency distribution, structural analysis of correlated variables with the Cross-Impact Matrix-Multiplication Applied to a Classification (MICMAC) software were used to obtain validity and thus be able to finally make the final theoretical assessment.

The intentional sample consisted of 27 (79) Physical Education teachers and 11 (23) basketball coaches who were working at the base level, representing 37.3%, as well as nine (9) managers who have worked and have experience in sports management in the province. These had as essential characteristics to be part of the research that they should have more than five continuous years in this work, experience with ages of 10-12 years, desire and time to participate in the research.

For the evaluation of the indicators by specialists, the characteristics taken into account were that they had more than 15 years of continuous work in basketball, Higher Education graduates and time and desire to participate in the research. In addition, five (5) of them have been working for more than 15 years as observers in the tests that are carried out for the sports selection in the school stage.



RESULTS AND DISCUSSION

Main results obtained during the diagnostic stage

In the documentary analysis, it was possible to determine that:

- In the PIPD (2017-2020), the guidelines cover everything related to what should be done in the ages from 7-8 years to the age studied and reaching adulthood. Such as, objectives, fundamental tasks, content, evaluation criteria, means for the development of physical capacities, work with the different types of preparation of the athlete, methodological indications, evaluation system and methodological procedures for the development of normative tests and pedagogical tests.
- All parameters and indicators for the detection and selection of sports from early ages are established, as well as the methodological procedures for each test, resulting in a tendency to evaluate the technical component and only the tactical performance in the game.
- The selection system is based on complying with the height regulations, awarding ten points, the completion of technical tests before a panel (50 points) and the result of the competition (40 points). Implementing an integral evaluation, but only in the events carried out, without taking into account indicators and measurement criteria to evaluate the systematic performance of the athlete during the entire teaching process in the initiation stage.

In relation to methodological and improvement activities, the following was noted:

- Aspects related to methodology or indicators for sports selection in the school stage for basketball at the initiation stage are not considered; the methodological treatment of the fundamentals of the sport is poor and decontextualized, considering the technical or physical component (height).
- The scientific research carried out does not consider aspects related to the improvement of the sports selection process in sport or the proposal of indicators that contribute to the integral development of the process in the 10-12 age group.



- The evaluation carried out by the directors of the selection process is developed comprehensively based on five indicators. Where it is include that, they must guarantee the provision of service with specialized personnel in all areas of the bases, comply with quality programs and projects established, visit reports, as well as the observation of classes and the review of the indications. Likewise, the improvement and methodological activities carried out by the teachers and the behavior of the students from an immediate perspective.

The results obtained from the observation carried out with regard to methods and methodological procedures for the development of the basketball sports selection showed that:

- In general, teachers apply the indicators established by the PIPD (2016-2020) to develop the sports selection, although the components that have predominated in the observed activities are height and technique. However, others that could make the selection more comprehensive lose relevance such as biological age, family, school, tactical, psychological, physical aptitude towards sport, among others.
- The treatment of individual differences and particularities during the selection process is insufficient, since the particularities of the student are not taken into account in technical tests and in the game.
- Organizational procedures are improvised, chosen through the teacher's criteria, based on the affinity for physical characteristics (height). In addition, the loss of time characterizes the process due to the inadequate and excessive use of frontal organizational procedures.
- The methods used are not very effective, since they do not guarantee the correct development of the activities for the selection, since there is a predominance of the exact reproduction of what is guided by the coach, which does not encourage independence in the student.
- Activities are not worked on for the selection from the introduction of new problematic situations close to the game or in the form of a game where there is



a balance of the tactical component, such as situations of numerical equality or numerical inequality on the offensive or defensive side.

In the survey applied to basketball coaches, the following results were shown:

- They consider that the selection process for basketball for the ages of 10-12 has no difficulties (71.4 %), while 28.6% state that there are difficulties.
- They point out that the main weaknesses that still persist in sports selection at school age in the 10-12 years old age group are directed to methodological preparations (47.6 %); improvement (28.5 %). The rest suggest that it is in the knowledge of indicators for sports selection in sport, in working conditions (4.8 %), experience in the practice of sport (9.5 %) and, finally, in motivation for work (4.8 %).
- Regarding the method used to select students, 77.8% stated that it was through compliance with height regulations, technical tests, as well as performance in the game, 13.8% stated that it was through attendance, discipline and technical progress achieved during the game. On the other hand, 8.4 % stated that it was through the agreement established between the National Institute of Sport, Physical Education and Recreation (INDER by its acronym in Spanish) and the Ministry of Education (MINED) that allows selection based on the individual disposition of students to practice the sport of basketball.

The following results were obtained in the interview with managers who are or were linked to basketball:

- They agree that the sports selection process for basketball in the 10-12 age group is good or average (13.8 %) while 86.2% rate the work as bad, because they give consideration to two components: physical preparation (height) and technical preparation (technical tests).
- They agree that the main weaknesses are in the methodological preparations, which represents 44.8 %, the scarce documentation that guides how to use other indicators in the work at the base level 13.8 % (only those guided in the PIPD



2016-2020), motivation, practical mastery of the sport, working conditions for work in these ages representing 18.1 %.

- When asked about indications to develop the process, 69 % and 27.6 % responded that none or few, and 3.4 % said that the PIPD guidelines (2016-2020) are sufficient.
- Regarding the joint work between Physical Education teachers and the basic sports coaches, 72.4 % of the sample said it was bad, 17.2% said it is average and only 10.3 % said it is good.
- Regarding the suggestion of indicators that should be included to improve the basketball sports selection in the 10-12 age group, 31 % agree on theoretical-methodological aspects of the sport; 37.9 % agree on the integral work with all the components of the athlete's preparation during the school stage; and 10.3 % agree on individualized work for the constant improvement of coaches.

Methodology used for the construction of the proposal

We begin by explaining the methodological steps used for the construction of the indicators, which followed the steps addressed by Campistrous and Rizo (2003), which were the following:

- Theoretical review of the indicators that influence the selection of basketball players for ages 10-12. This review includes a search in the specialized and published literature to which the researcher has access.
- Conducting an informal consultation with sports specialists to create an initial list of possible indicators as a conclusion to the previous steps.
- Selection of specialists. These specialists must be "contextualized", that is, they must not only have a command of the problem under study, but also be immersed in the context in which the study is carried out.
- Consultation with specialists to reduce the list of indicators, giving them relevance and consideration.
- Application of statistical techniques to reduce the number of indicators in the initial stock without losing substantial information. For this purpose, the Cross-Impact Matrix-Multiplication Applied to a Classification (MICMAC) tool was



applied. Which allows establishing the degree of direct influences between factors, extracting and identifying the key indicators and determinants of the problem studied, with the help of tables and graphs that allow modeling the problem to be addressed, in addition to the factorial analysis.

- Analysis of the proposed indicators and their assessment by the specialists.

To determine the indicators, a review of the specialized literature on the indicators to be used was carried out using the analytical-synthetic method, covering all the components of the athlete's preparation in the school stage, as well as aspects that have been suggested in the interviews and surveys for this research.

To determine the indicators from the review of the specialized literature in the sport of basketball, reference was made to authors such as Paredes and Pérez (2019); Tóala *et al.* (2019); Pardo (2020); Bueno *et al.* (2021); Torres *et al.* (2022) and Veitia *et al.* (2023). Which provided a starting point for the construction of the indicators and that they were in correspondence with the teaching-learning process in the initiation stage of the game.

The authors previously consulted allow the researcher to arrive at the use of the inductive-deductive method to establish generalizations from the general to the particular and vice versa for the elaboration of the initial stock of possible indicators for the sports selection in basketball in the ages of 10-12 years old.

Following the steps of Campistrous and Rizo (2003), in a first round, the participants were asked to propose, based on their professional experience, indicators for sports selection in basketball at the school stage, taking into account that they should be adjusted for coaches to select at these ages. Based on the interpretation of the participants and the contributions made, a group of indicators was formed, divided into two databases of 46 indicators.

The second round is based on the 46 indicators provided in the first round with the objective of reducing them, which were previously socialized to everyone, to determine which ones should be part of the sports selection to basketball, contextualized in the ages from 10-12 years. With the purpose of bringing these indicators closer to the work carried



out by the coaches at the base from the stage of sports initiation to basketball, also taking into account the guarantee of an integral process that adjusts to the objectives for this stage of development of boys and girls.

This stage begins by approaching the indications proposed in the first round, the characteristics that these should have to respond to the guidelines of the PIPD (2016-2020) and the characteristics for these ages. To then, develop a brainstorming session that allows providing the individualized criteria of each participant, this allowed the researcher to determine the initial stock of indicators, being conformed by 23.

It is given continuity to the two previous rounds of informal consultation with specialists, to determine the indicators that will make up the basketball sports selection, but not before adjusting the names of several indicators to achieve greater understanding among the specialists who will evaluate each one of them.

Following the recommendations of the two rounds of the informal consultation, and achieving consensus between the researcher and the participants, the indicators for sports selection for basketball in the ages of 10-12 years were assessed, given in one of the ten categories. Subsequently, the corresponding calculations were carried out in the Excel statistical package, obtaining the tables of relative and accumulated frequencies.

After determining the initial stock of indicators for the basketball sports selection, we proceeded to the selection of specialists to carry out the assessment of all the indicators, seeking to ensure their scientificity. Then, the indicators determined in the initial stock are reduced based on informal consultation with experts, according to the steps provided by Campistrous and Rizo (2003) for the final determination of the same, for which it was decided to use the assessment of specialists.

Results of the evaluation of the indicators by specialists

For the selection of the specialists, an individual interview was conducted in which the reason for their selection was explained and their willingness to participate was confirmed. Once confirmed, they were informed of the objectives of the evaluation and



it was determined who met the established requirements. In a second stage, the indicators were subjected to assessment by the 11 specialists, which in all cases showed high professionalism, dedication, honesty and scientific rigor.

Continuing with the research process, the initial stock of indicators was delivered, where they were asked to evaluate the indicators from a theoretical point of view, giving their respective considerations on which of them could form part of the sports selection for basketball at ages 10-12 years. In all cases, they were given enough time to carry out the requested work.

Next, the criteria issued and the analysis of the criteria issued by each specialist were collected:

Qualitative assessment

Specialist 1. Criteria issued:

- It states that the proposed indicators contribute to the solution of the problem of the sport.
- It finds the indicators that scientifically and comprehensively prepare all coaches for the national team are very consistent.
- It proposes six topics for the indicator related to Physical Education based on its objectives for the ages studied and the use of techniques that allow working on thematic content and unifying the ideas or knowledge acquired between the teacher at school and the coach in his work at the base level.

Specialists 2. Criteria issued:

- It believes that the proposal of indicators solves the problem that the sport is going through.
- Find a logical order in the organization of the indicators and the topics to be discussed.
- It suggested that a workshop be held with the teachers of the province to analyze the indicators.



Specialist 3. Criteria issued:

- Incorporating technical elements from knowledge already acquired in Physical Education is a very good thing that helps the base level coach to work with much more quality in the selection of the athlete.
- Applying the proposed indicators at the end of the year allows the sports reserve to remain active at the base level and to maintain the quality of the new entrants.
- To use the proposed indicators for all teachers at the base level to improve sport in the province and the quality of admission to School Sports Initiation centers.

Specialist 4. Criteria issued:

- It consider that the proposed indicators favor the preparation of coaches in the given problem, by acquiring knowledge, skills and methods for improving the quality in the selection of sports talents at the base level.
- It suggests indicators that can be implemented by coaches at the base that comprehensively selects the sports reserve from the base to the high-performance centers.
- Proposes to include a topic that addresses the study of student behavior from the family, school and social context.
- It proposes the discussion of the indicators in the provincial basketball commission and begins their approval and practical validation in all areas of the base level.

Specialists 5. Criteria issued:

- It believes that the indicators for the base are close to the reality that coaches face today, since they are created for the high-performance pyramid, which is not the case for the selection at the base level.
- It considers it very appropriate that in the first indicators, everything related to physical characteristics should be studied in depth, based on the characteristics of the sport.



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- It states that the indicators comprehensively gather aspects that favor sports selection in the sport of Basketball.

Specialist 6. Criteria issued:

- It believes that the proposed indicators meet the basic and necessary conditions to be taken into account when selecting an athlete in the sport of basketball.
- The indicators to be addressed are very well conceived, which will allow the design, application of pedagogical, psychological and sports methods in accordance with the current demands of national sport.
- It transforms the mindset of coaches by proposing aspects from science that provide greater selection based on scientific foundations.

Specialists 7. Criteria issued:

- The proposal is well conceived, in accordance with the demands of national and international sport, and can solve one of the main problems faced by teachers at the base level today, since almost all of them are new and have little experience.
- Due to its importance, it is suggested to extend it to the whole province through a postgraduate course for all basketball teachers and coaches in Cienfuegos.

Specialists 8. Criteria issued:

- It believes that the proposal brings together essential and necessary aspects that contribute to solving a long-standing problem, namely the lack of a guide for teachers at the base level to select their sports reserve.
- It understands that, after its approval, it is very appropriate to train all teachers and coaches to provide them with the knowledge and work tools that will improve their work and thus the contribution of athletes to high-performance centers.



Specialists 9. Criteria issued:

- It considers that the proposal does contribute to solve the problem addressed, since the tests performed in Physical Education do not meet the expectations of a specific sport, but rather in a general way.
- It is of the opinion that the proposal is in line with current pedagogical and scientific-technical conceptions, in addition to addressing the fundamental issues regarding the selection of sports talents that should be applied at this level.

Specialist 10. Criteria issued:

- The indicators collect essential aspects for the selection of talents and constitute an important tool for the quality of this process.
- It refers that the proposed indicators contribute to solve the problem addressed.
- It proposes to present the indicators to the Provincial Sports Commission for their practical generalization throughout the province.
- It suggests developing a similar proposal for selection from the sports areas to the high-performance centers based on scientific foundations.

Specialists 11. Criteria issued:

- It considers that the proposed indicators contribute to solving a problem that has existed for many years and that it has contributed to the quality of the selection of children for the practice of sport at the base level.
- It believes that the proposed indicators prepare the teacher or coach to fulfill the objectives for which the sports areas have been created at the base under an integral and more scientific foundation.
- Participatory techniques can be incorporated into the proposal, which allow for the evaluation of learning rates, changes in the way of thinking and interpreting, which correspond with the objectives for these ages in Elementary Schools.
- It believes that after its approval, it can be proposed to the Provincial Basketball Commission for its implementation in other municipalities.



In general terms, it can be summarized that the assessment made by the specialists to the indicators was expressed in the following way:

- There was a 100 % consensus among the specialists that the proposal of indicators is well structured and makes it possible to solve the existing problem that has not been solved over the years.
- 53.3 % of respondents agree that it should be analyzed in the Provincial Sports Commission with the base level coaches in order to implement it in the other municipalities of the province.
- The proposed indicators contribute to the solution of the problem that the sport has at the base level for its selection to the sports initiation schools.
- The indicators are in line with scientific and comprehensive standards, preparing all coaches for selection with higher quality.
- They propose for the indicator six (6) tests related to Physical Education based on its objectives for the ages studied and the use of techniques that allow working on thematic content and unifying the ideas or knowledge acquired between the teacher at school and the coach in his work in the communities.
- Using the proposed indicators in all the teachers of the base level, improves the sport in the province and the quality of admission to sports initiation centers.
- It proposes indicators that can be used by coaches in the comprehensive selection of the sports reserve, from the base to the high-performance centers.
- It transforms the mindset of coaches by proposing aspects that provide greater selection based on scientific foundations.
- The proposal is well conceived, in line with the demands of national and international sport, and can solve one of the main problems faced today by teachers at the base level, since almost all of them are new and have little experience.
- It is believe that, after its approval, it is very appropriate to train all teachers and coaches to provide them with the knowledge and work tools to improve their work and thus the contribution of athletes to high-performance centers.



Quantitative assessment of specialists

The processing of the results was based on a survey that included the elements involved in the indicators, which in the evaluations of the specialists revealed a consensus in evaluating the indicators of physical and physiological characteristics, skill levels and technical-tactical exercise complex as very adequate. While the indicators of psychological characteristics, social or contextual factors, as well as biomedical qualities were evaluated as quite adequate. All this demonstrates the relevance of the design of the indicators, according to the theoretical consensus expressed by the specialists.

Proposal validated by specialists

Base on the analysis carried out and the evaluation by the specialists, and taking into account all their criteria, the following proposal of indicators was arrived:

1. Physical characteristics:

- Standing height.
- Length of arms, hands, trunk and legs.
- Circumference of the muscles of the arms and thighs.
- Determine biological age.
- Scope.

2. Biomedical qualities:

- Health status and physical constitution
- Background.
- Weight.

3. Physiological Characteristics:

- Flexibility and coordination.
- 30-meter race for both sexes.
- 200-meter race for women and 300 meters for men.



- 600-meter race for women and 800 meters for men.
- Planks and sit-ups in 30 seconds.
- Jumping to touch the lower edge of the hoop with both hands or to touch hanging objects.

4. Skill levels:

- Attention.
- Perception.
- Analytical capacity.
- Gestural skill.
- Control of emotions

5. Psychological characteristics:

- Motivation. (Ten Wishes Test)
- Concentration.
- Combativeness.
- Mental toughness.

6. Social or contextual factors. :

- Communication.
- Cheerful, optimistic character and confidence in their abilities.
- Interview with parents, teachers and Physical Education teacher.

7. Complex of technical-tactical exercises:

- Develop exercises in numerical equality and inequality on both sides.
- During the game, observe the application of the fundamentals of basketball in the solution of the problems that arise.



CONCLUSIONS

The sports selection process in the province of Cienfuegos in the basic sports areas for the sport of basketball is developed by inappropriate methods, which makes it difficult to select the best boys and girls for the Sports Initiation Schools.

In accordance with the objective of the work, it was decided to elaborate a proposal of indicators based on physiological, physical, social, technical-tactical and psychological elements, which were satisfactorily evaluated by specialists in the field.

Of the seven indicators analyzed and evaluated by the specialists, four were very adequate (57.1 %) and three were quite adequate (42.9 %), demonstrating the correct design proposed.

The new proposal of indicators provides base level coaches with an appropriate tool for sports selection in the base level and initiation sports areas in the ages of 10-12 years, corresponding to the criteria assessed by specialists.

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The authors declare having competing interests.

Authors' contributions:

Liusván Eduarte Águila: main author of the study in charge of the conception of the idea, preparation and application of instruments, collection of information resulting from the instruments applied, statistical analysis. Julio Miguel Gallardo Fine: search and review of literature, general advice on the subject addressed, writing of the original (first version)

Janette Lucia Velazco Guelmes: translation of terms or information obtained, review of the application of the applied bibliographic standard, review and final version of the article and correction of the article



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