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Improvement strategy aimed at Physical Education teachers who taught Baseball 5

[Estrategia de superación dirigida a profesores de Educación Física que imparten el béisbol 5]

[Estratégia de melhoria voltada aos professores de Educação Física que ensinam beisebol 5]

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ABSTRACT

Introduction: Currently, the interest in enhancing the quality of Physical Education class management requires continuous improvement that ensures professional and personal development. In this regard, it is necessary to refine the teaching-learning process of Baseball 5 as a sport in Physical Education classes at the Primary Education level.

Objective: To develop an improvement strategy aimed at preparing Physical Education teachers who taught the Baseball 5 program in Primary Education.



Materials and Methods: The sample consisted of all Physical Education teachers in Primary Education in the municipality of Nuevitas. The methods used included theoretical, empirical, and mathematical-statistical approaches.

Results: The improvement strategy allowed for an increase in the knowledge of Physical Education teachers regarding the content of Baseball 5 in Physical Education classes at the Primary Education level.

Conclusions: The improvement strategy is a feasible proposal for the training process and the theoretical-methodological preparation of Physical Education teachers who deliver the Baseball 5 program in Primary Education.

Keywords: Baseball 5, Physical Education, Improvement Strategy

RESUMEN

Introducción: en la actualidad, el interés por elevar la calidad en la dirección de la clase de Educación Física requiere de una superación continua que garantice el mejoramiento profesional y humano; en tal sentido, se necesita perfeccionar el proceso de enseñanza aprendizaje del béisbol 5 como deporte en las clases de la Educación Física en la Enseñanza Primaria.

Objetivo: elaborar una estrategia de superación dirigida a la preparación de los profesores de Educación Física que imparten el Programa de béisbol 5 en la Enseñanza Primaria.

Materiales y métodos: la muestra fueron todos los docentes de Educación Física de la Enseñanza Primaria del Municipio de Nuevitas. Métodos teóricos, empíricos y matemáticos-estadísticos.

Resultados: permitieron que la estrategia de superación elevara los conocimientos de los profesores de Educación Física en los contenidos del deporte béisbol 5 en las clases de Educación Física en la Enseñanza Primaria.

Conclusiones: la estrategia de superación es una propuesta factible al proceso formativo, la preparación teórico-metodológica de los profesores de Educación Física que imparten el Programa de béisbol 5 en la Enseñanza Primaria.



Palabras clave: beisebol 5, Educación Física, estrategia de superación.

RESUMO

Introdução: atualmente, o interesse em elevar a qualidade na gestão das aulas de Educação Física exige melhoria contínua que garanta o aprimoramento profissional e humano; Nesse sentido, faz-se necessário aprimorar o processo de ensino-aprendizagem do beisebol 5 como esporte nas aulas de Educação Física do Ensino Fundamental.

Objetivo: desenvolver uma estratégia de aprimoramento voltada à preparação de professores de Educação Física que ministram o Programa 5 de Beisebol no Ensino Fundamental.

Materiais e métodos: a amostra foi composta por todos os professores de Educação Física do Ensino Fundamental do Município de Nuevitas. Métodos teóricos, empíricos e matemático-estatísticos.

Resultados: permitiu a estratégia de aprimoramento para aumentar o conhecimento dos professores de Educação Física nos conteúdos da modalidade beisebol 5 nas aulas de Educação Física do Ensino Fundamental.

Conclusões: a estratégia de aperfeiçoamento é uma proposta factível para o processo de formação, a preparação teórico-metodológica dos professores de Educação Física que ministram o Programa Beisebol 5 no Ensino Fundamental.

Palavras-chave: beisebol 5, Educação Física, estratégia de melhoria.

INTRODUCTION

The Physical Education teacher must prioritize the pursuit of physical performance alongside the training and development of positive habits and attitudes favorable to sports practice. Their ongoing updating regarding knowledge in the didactics of sports, as well as the development of skills for practice, allows for the refinement of the teaching-learning process, enabling a reflective attitude towards their actions in terms of personal and social impact. This constitutes a necessity for these professionals regarding the quality of their advancement.



Añorga (2014) defines the improvement strategy as a system of personalized actions that allow for the implementation of methods and procedures in pedagogical practice, facilitating the transformation of individuals' behavior as seen in the performance of participants, leading to professional improvement and the enhancement of the quality of life for individuals developing in a specific sociocultural context.

Personal improvement should focus on meeting individual needs and enhancing professional skills, in accordance with the changes demanded by society. In this sense, intellectual capital and the ability to generate new knowledge are considered essential resources for any country across all fields of human knowledge (Bernaza, 2018).

It is required that the teacher becomes a transformative agent of educational reality and describes the mutually supportive actions of experiences in the development of a task. The role of the teacher, their performance and development in the profession, as well as working conditions, their training, professional advancement, and evaluation are crucial. A teacher who acquires new knowledge and skills, with the ability to transfer pedagogical and didactic skills to situations specific to other subjects where the received training may not adequately prepare them (Castro et al., 2020; Suarez et al., 2021; López Rojas, 2021).

In recent years, there have been changes and transformations in Physical Education programs in Cuba, with the aim of improving educational standards and providing greater opportunities for children and young people. Educational institutions are focused on enhancing their educational models to ensure quality teaching and provide academic excellence. The student is the primary focus in this teaching-learning process.

One way to achieve this is through the modification and advancement of the curriculum. Reforms and updates of school curricula have been carried out in various countries with the goal of improving student education. Physical Education programs are under significant pressure to demonstrate evidence that their methods are successful in preparing students for an active, healthy, and successful life.



Physical Education is a subject that integrates actions primarily of a physical nature and is taught in educational centers from an early age. Its implementation is considered necessary and essential in the comprehensive training process of students, as it contributes to both the physical and psychological development of individuals; however, it is impossible to achieve this if teachers do not possess the necessary knowledge and skills.

The professional development of Physical Education teachers is fundamental to ensuring excellent development in students. In the field of Physical Education, Baseball 5 has become a popular discipline among young people. It is essential that teachers are always willing to improve themselves and continue learning to provide the best training in this discipline.

Baseball 5 has been introduced into the new improvement programs for Physical Education in the second cycle of Primary Education, as expressed by the national Physical Education methodologist who oversees the Baseball 5 project during a clinic held in Havana as part of the International Event Cuba Motricity 2018. Where it was announced that this would be taught as a variant of the Baseball unit in programs at all educational levels.

This innovative and dynamic sport, which is purely Cuban, arises from a traditional Cuban game called *cuatro esquinas* (four corners). It is a street version of the classic game of baseball, maintaining the same basic concepts. It has the unique feature of being able to be practiced anywhere in a small space and requires only the use of a rubber ball.

Multiple studies have been developed regarding different elements related to Baseball 5 among which are Torres (2019), a preliminary study for the teaching of Baseball 5. Torres and Ramos (2020), discussing Baseball 5 as an alternative game to increase motivation in Physical Education classes and university sports. Oberto (2022), which presents a system of exercises and indicators for the technical preparation of university athletes in Baseball 5; and Rodríguez, Perdomo, Coll, Vázquez, and Machín (2022), studying stabilizing muscles and the most common injuries among practitioners of Baseball 5.



The model of Cuban primary education is characterized by its focus on the comprehensive development of the student, promoting the internalization of knowledge and value orientations from the earliest grades. The implementation of the "Primary School Model" is generalized, which assumes as its "central methodological core" the formation of a reflective, critical, and independent child who takes on an increasingly leading role in their actions and who possesses feelings of love and respect for their homeland, family, school, peers, and nature.

This model is in constant transformation, aiming to train reflective, critical, independent, and proactive students in their actions, in accordance with the system of values and ideals of the Socialist Revolution. Vygotsky's theory (1983), also known as the historical-cultural approach, is applied in Cuban primary education as a theoretical foundation for the development of the comprehensive training of students. This theory emphasizes the importance of social learning and interaction between the individual and their environment and is based on the idea that learning occurs through the mediation of cultural and social tools.

Physical Education teachers must prioritize the pursuit of physical performance, as well as the formation and development of positive habits and favorable attitudes towards sports practice. Through the constant updating of knowledge in sports education and the development of skills for practice, the teaching and learning process is completed, allowing for a reflective attitude towards one's own actions based on personal and social influences, which play a significant role. This extends beyond the boundaries of the school to other environments.

This is necessary for these professionals, and the quality of their improvement is very important. The limitations and conditions under which the teaching and learning process of Physical Education takes place have different characteristics. It is essential to consider the degree of motor development in sports practice, saving teaching time while maintaining the principles of integration, inclusion, and individualization. These are important aspects in this era, as the process becomes individualized and leads to the transformation of the participating subjects.



The study of Physical Education classes in Baseball 5, using methods such as document analysis, observation, methodological activities, classes, and interviews, revealed theoretical and practical deficiencies among teachers. Taking the above into account, the following shortcomings were revealed: There are evident difficulties in the quality of Physical Education classes, particularly affecting Baseball 5, which shows:

- Limited knowledge among Physical Education teachers regarding the inclusion of technical fundamentals and physical conditions.
- The selected exercises for addressing differentiated student needs do not meet their requirements.
- The use of teaching styles that promotes independence, socialization and creative of the students is not implemented in classes.
- Limited theoretical-methodological treatment of the topic in methodological activities with Physical Education teachers.

Therefore, the objective is proposed to develop a training strategy aimed at preparing Physical Education teachers who taught the Baseball 5 Program in Primary Education.

MATERIALS AND METHODS

For the development of the research, the sample considered was the 34 Physical Education teachers who teach the Baseball 5 Program in Primary Education in the Municipality of Nuevitas. The use of sources involved an analysis of the deficiencies and recommendations regarding the levels of development achieved by each teacher during their educational practice, which allows for projecting a proposal based on the particularities of the subjects under study, as well as gathering information about areas for improvement where priority levels and pathways are established to address them.

For the definition of the content, indicators measuring three dimensions were used as references: cognitive, procedural, and attitudinal; each of these specifies how



professional pedagogical skills manifest in the methodological preparation of Physical Education teachers who teach the Baseball 5 Program in Primary Education.

The research adopted a dialectical-materialist perspective to utilize more efficient methods and techniques in the scientific study of the research object. This perspective also helped identify causal and functional relationships in the dynamics of the object, as well as the essential and contradictory relationships present within it. To carry out the tasks, various research approaches and methods were employed in the theoretical, empirical, and statistical fields. These techniques assisted in processing the information described below:

The theoretical methods such as analysis-synthesis, historical-logical, inductive-deductive, and systemic-structural-functional were used to establish the theoretical and methodological foundations of the continuous training process for Physical Education teachers in Primary Education. Additionally, the different stages and actions that make up the improvement strategy were identified and classified.

The analysis-synthesis method was used to substantiate the theoretical-methodological frameworks that characterize the development process of Physical Education teachers in Primary Education, as well as to identify the similarities between the initial and final diagnosis of the scientific problem in terms of needs and capacities. On the other hand, the historical-logical approach was employed to study the historical background of the improvement process for Physical Education teachers in the specific socio-historical circumstances they have gone through.

The inductive-deductive method facilitated the study of the particular and unique phenomena that characterize the scientific problem, in order to infer or confirm theoretical formulations to reach logical conclusions. The systemic-structural-functional method was used to coherently structure the proposed strategy based on the results of the diagnosis of the state of improvement of Physical Education teachers in elementary schools and the interrelation between their components, with characteristics of a system, dependency, hierarchy, and structuring, as well as the relationships and interdependence among the contents.



Empirical methods allowed for diagnosing and evaluating the initial and final state of preparation for Primary Education Physical Education teachers for the development of Baseball 5 among students. Several scientific methods for data collection were applied, including document review, observation of improvement activities, surveys of Physical Education teachers, and group and individual interviews with municipal directors and methodologists.

The analysis of the current state of the research problem was conducted using the aforementioned instruments that facilitated data collection and evidence gathering. These were designed in advance, followed by processing the information, evaluating, and interpreting the results, which led to the determination of an inventory of problems in the improvement process for Physical Education teachers in Primary Education.

RESULTS AND DISCUSSION

In the diagnosis, it is identified as a strength, the recognition of Physical Education teachers with regard to the need for improvement, in order to implement the Baseball 5 Program. It is confirmed that there are difficulties in directing a teaching-learning process, which is based on insufficient methodological teacher preparation. These elements allowed for the foundation of an improvement strategy that aligns with the needs and interests of the subjects under study. It was established that among the multiple actions that could be undertaken for Physical Education teachers who teach the Baseball 5 Program, improvement plays a primary role, as it enhances their preparation and thus fosters their future development while also constituting a fundamental avenue for their attention and stimulation.

For the development of the proposal, four stages are specified:

Diagnosis Stage: Identification of the current state of the improvement process for Physical Education teachers related to their needs, interests, and potentialities for teaching Baseball 5 in Primary Education in Nuevitas.



Action 1: to diagnose the current condition of the improvement for Physical Education teachers who teach the Baseball 5 Program in Primary Education.

Action 2: to develop the instruments and techniques that will be used in the selected sample.

Action 3: to identify possible constraints that teachers might face when implementing the improvement strategy.

Planning Stage: Planning the actions that will be executed in subsequent stages of the strategy, including objectives, content to be developed, organizational forms of improvement, and evaluation methods to be carried out.

Action 1: Specify the activities to be carried out to improve the development of teachers, identifying the relationships of supervision and collaboration that should exist among them.

Action 2: Determine the duration, location, personnel, materials, and institutions that will be considered as potential collaborators and executors of the development strategy.

Action 3: Establish the stages of implementation and the distinctive qualities of each of them.

Action 4: Create multimedia materials that include updated reference materials.

Action 5: Develop a plan to supervise and evaluate the actions and activities that will be carried out in the development strategy, in order to achieve the established objectives.

Implementation Stage of the Development Strategy: Implementation of actions to develop the selected organizational forms of development (courses, methodological workshops, self-improvement activities), which aim to transform the methodological teaching preparation of Physical Education teachers who teach the Baseball 5 Program in Primary Education in Nuevitas.



Action 1: Facilitate the acquisition of knowledge and theoretical and methodological principles for teaching the Baseball 5 Program, generating a trusting environment and awakening interest, motivation, and a sense of belonging through a collaborative, dialogical, and reflective setting that facilitates the joint work of teachers in its implementation. Supported by teaching methods and resources that foster enthusiasm for the topics addressed.

Action 2: Present actions in a tangible or concrete manner, taking into account the development strategies that will be implemented.

Action 3: Initiate development courses.

Action 4: Implement a corrective plan for teachers based on development that allows for establishing new ways of acting to facilitate change or transformation.

Action 5: Conduct workshops aimed at promoting new work approaches that facilitate the required modification or transformation through training.

Action 6: Promote the exchange of knowledge and collaboration among individuals with different theoretical, scientific, methodological, and practical perspectives.

Evaluation Stage: Assessment of the results of the transformation achieved by participants based on their correspondence with their objectives (effectiveness), the appropriate use and most rational manner of resources (efficiency), and the satisfaction of beneficiaries' needs (effectiveness).

Action 1: to determine the different methods and categories for supervision and evaluation.

Action 2: to determine the relevance of the designed development strategy to improve the preparation of Physical Education teachers who teach the Baseball 5 Program in Primary Education in Nuevitas.



Assessment of the Feasibility of the Improvement Strategy

Improvement is considered by Martínez (2017) as a logical system through which needs are identified, problems are related, requirements for their solution are determined, decisions are made among alternatives, and methods and means are obtained and applied.

Bautista *et al.* (2018) state that to carry out this process, the demands related to the particularities of the historical moment being experienced, the specific conditions of the country, and the specific demands of the professional's work must be assessed. As well as, the basic activities of their performance, the theoretical framework that underpins their training, and the objectives of the specific competencies in the professional improvement process must also be considered.

Vergara *et al.* (2019) propose a strategy for improvement to enhance the performance of futsal coaches, while Cruz *et al.* (2019) present a model for the professional development management of university professors. All the related authors identify and substantiate the components that make up the structural representation of their scientific products, whose main invariant is the systemic and functional nature.

The results of applying this method demonstrate that 76 % of teachers are very satisfied with the actions taken to improve teacher preparation in the teaching of baseball 5 in Primary Education. Additionally, 23% also expressed a high degree of satisfaction. In summary, 95.3% of teachers fall into the two highest categories of satisfaction, demonstrating the positive impact of the actions carried out in this improvement strategy (Table 1).



Table 1. - Observation of the Development of Improvement Activities

No	Indicators	VA	QA	A	SA	I
1	Whether the results of the diagnosis and the characterization of the teachers are taken into account for their differentiated attention.	-	-		2(22%)	7(78%)
2	Whether the contents being developed respond to the needs of the participants.			1(11%)-	2(22%)	6(67%)
3	Whether the accumulated experience of the teachers is utilized.			2(22%)	2(22%)	5(46%)
4	Whether it contributes to the development of sports skills and physical conditions in Baseball 5.	2(22%)		2(22%)	2(22%)	3(33%)
5	Whether cooperative work among the group of teachers is used for directing the Baseball 5 class in Physical Education.			1(11%)	3(33%)	5(46%)
6	Whether the contents of the training are linked to solving problems to teach the Baseball 5 class in Primary Education.				3(33%)	6(67%)
7	Whether different forms of learning evaluation are used.			1(11%)	2(22%)	6(67%)

Legend: VA - very adequate; QA - quite adequate; A - adequate; SA - somewhat adequate; I - inadequate.

The results of the diagnostic study allowed for the identification of the scientific problem, hence the need to propose a strategy for the improvement of Physical Education teachers who teach the baseball program in Primary Education. Professional improvement aligns with terms such as upgrading, training, preparation, and updating, among others. However, authors like González *et al.* (2020) and Galindo (2017) argue that, although each of these terminologies carries different meanings, they do possess clearly defined objectives that distinguish them from one another, generally considered particular variants or expressions of improvement.

Considering the evaluations by Estévez *et al.* (2022), it can be evidenced that one of the significant aspects in the educational context of any country, and consequently, the



transformative action to improve quality, is established by analyzing the process of initial training and ongoing improvement of teachers.

On the other hand, the term "improvement" is closely related to that of professional improvement. In this regard, "the professional development of teachers constitutes one of the fundamental links that every society must work on to guarantee not only knowledge but also the development of feelings, attitudes, and values in future generations" (Estévez *et al.*, 2022, p.1055).

Reflecting on this particular point, Taro *et al.* (2019) present results from their studies that reveal shortcomings that still hinder teachers from achieving quality improvement. Although they have different viewpoints, Bernaza *et al.* (2018), González *et al.* (2020), and Estévez (2019) agree that professional development is an indispensable and ongoing training process that addresses existing problems in practice, thereby improving educational quality. Similarly, they emphasize that any professional development process designed for teachers to update and refine their knowledge must correspond to the current challenges and demands of the educational process.

It is essential to highlight that improvement encompasses all actions undertaken to acquire the required knowledge and skills, allowing Physical Education teachers to perform their functions more effectively in light of changes that may arise in the context of their pedagogical work. In this regard, Estévez *et al.* (2022) infer that professional development is a continuous, conscious, and systemic process of updating and refining pedagogical knowledge and skills, which also contributes to the enhancement of both professional and human performance.



CONCLUSIONS

The study conducted on the theoretical and methodological foundations allowed for the characterization of the professional development process of Physical Education teachers who teach Baseball 5 and the necessity for its improvement for their development and delivery in Physical Education classes.

The diagnostic assessment revealed that there are still limitations in the preparation of Physical Education teachers concerning the contents of Baseball 5, which prevent them from achieving better results in its development during Physical Education classes. This is due to the insufficient theoretical and methodological treatment they have received during the various stages of their training and pedagogical practice performance.

The improvement strategy is a feasible proposal for the training process, focusing on the theoretical and methodological preparation of Physical Education teachers who teach Baseball 5, as well as the management of the improvement process, which is necessary to enhance their methodological teaching preparation.

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Conflict of Interests:

The authors declare that they have no conflicts of interest.

Authors' contributions:

Lenier Borges Primelles: conception of the idea, search and review of literature, preparation of instruments, application of instruments, collection of information resulting from the instruments applied, collection of information resulting from the instruments applied, statistical analysis, preparation of tables, graphs and images, translation of terms or information obtained, writing of the original (first version, author coordinator

Luis Alfonso Rangel Mayor: general advice on the subject addressed, review and final version of the article, correction of the article, review of the application of the applied bibliographic standard.



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