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The professional development process of the baseball coach

The professional improvement process of the baseball coach

The professional training process of the baseball coach

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ABSTRACT

To improve baseball training, it is necessary to transform the way coaches operate, what must find rational solutions in the conception of the professional development process as a path to improving preparation. In this regard, the objective was to establish a theoretical model with a new vision of the professional development process for baseball coaches. The research involved 54 baseball coaches who worked with pitchers in the U-12 age group in the municipality of Santiago de Cuba, Cuba. Theoretical methods employed included analytical-synthetic, systemic-structural-functional, and modeling; empirical methods included observation, documentary analysis, expert judgment, and surveys; and statistical methods included descriptive statistics. The results demonstrated a new rationale for the professional development process for coaches, enabling them to acquire training tailored to educational resources and efficiently perform their professional duties. The criteria issued by the experts agreed that the professional development model for baseball coaches provided a new vision for fulfilling their social role.

Keywords: baseball coach, reflective practice, didactic preparation, systematization, professional development

RESUMEN

Para el perfeccionamiento de la formación deportiva del beisbol es necesario lograr transformaciones en el accionar de los entrenadores, lo que debe encontrar salidas racionales en la concepción del proceso de superación profesional como itinerario para elevar la preparación. En este sentido, se precisó como objetivo establecer un modelo teórico, con una nueva visión del proceso de superación profesional del entrenador de beisbol. En la investigación se implicó a los 54 entrenadores de este deporte que trabajaron en el área de lanzadores de la categoría sub 12 años, del municipio Santiago de Cuba, Cuba. De los métodos teóricos, se emplearon el analítico-sintético, el sistémico-estructural-funcional y la modelación; de los empíricos, la observación, el análisis documental, criterio de experto y la encuesta; y de los estadísticos, la estadística descriptiva. Como resultado se demostró la nueva lógica dispuesta en el proceso de superación profesional del entrenador, para



adquirir una preparación ajustada a los recursos didácticos y ejercer con eficiencia su labor profesional. Los criterios emitidos por los expertos coincidieron en que el modelo de superación profesional para el entrenador de beisbol brindó una nueva visión, en el cumplimiento de su función social.

Palabras clave: entrenador de beisbol, práctica reflexiva, preparación didáctica, sistematización, superación profesional

RESUMO

Para a melhoria do treinamento desportivo do beisebol, é necessário alcançar transformações nas ações dos treinadores, que devem encontrar soluções racionais na conceção do processo de desenvolvimento profissional como um itinerário para melhorar a preparação desses profissionais. Neste sentido, o objetivo é estabelecer um modelo teórico que permita uma nova visão do processo de desenvolvimento profissional do treinador de basebol. Participaram da pesquisa 54 treinadores de beisebol que atuam na área de arremessadores na categoria sub-12 no município de Santiago de Cuba, Cuba. Os métodos teóricos utilizados foram o analítico-sintético, o sistémico-estrutural-funcional e a modelização; os métodos e técnicas empíricos utilizados foram a observação, a análise documental, a opinião de peritos e o inquérito, e a estatística descritiva foi utilizada como método estatístico. Como resultado, apresenta-se a nova lógica para conceber o processo de aperfeiçoamento profissional, a partir do qual o treinador de basebol pode adquirir uma preparação singular ajustada aos recursos didácticos que exige, de modo a realizar o seu trabalho profissional de forma eficiente.

Palavras-chave: desenvolvimento profissional, sistematização didática, preparação didática, prática reflexiva, treinador de basebol.



INTRODUCTION

Currently, the Cuban Baseball Federation (FCB in Spanish) faces the international dominance of major sports powers organized in professional leagues established in Mexico, the Dominican Republic, the United States, and Asian countries. Among these is the minor league, which has stringent requirements regarding training, competition, the use of sports equipment, new technologies, regulations, and rules that foster transformations in the understanding and dynamics of the game.

This entails important and necessary changes in the way of approaching training from the beginning of sports, in order to ensure the preparation of human resources in line with the demands of current sports education.

In Cuba, baseball's results in the last decade have not been very outstanding, according to the Comprehensive Athlete Preparation Program (Guevara & Martín, 2021), which has exacerbated the imminent need to carry out methodological exercises at the country level, with the direct participation of the vice presidency of the National Institute of Sport, Physical Education and Recreation (INDER) and the Cuban Baseball Federation.

The purpose is to contribute new perspectives, derived from the direct application of the classic brainstorming method, where diverse proposals are presented to provide solutions to the current problems of Cuban baseball. One of the aspects to be taken into account is precisely professional development, which strengthens and gives relevance to the research.

At the international level, the professional development process is the subject of interest of authors such as Da Silva et al. (2020); Iglesias et al. (2017); López et al. (2019), who present important criteria such as overcoming needs with respect to the scientific and technological advances in contemporary sport that bring about important and renewed changes in the social, techno-sporting and economic order; and the inadequacies in carrying out multidimensional research that associates the use of teaching resources with the coach's procedures, in order to conceive training in the area of under-12-year-old throwers, which indicates a direction to follow.



In Cuba, the professional development process is ongoing, conceived as inseparable from the coaches' professional career and tailored to their growing needs. In this regard, the studies by López et al. (2023); Pérez et al. (2022); Pupo and Montenegro (2018); Torres et al. (2023); and Veitía et al. (2023) stand out, highlighting the importance of its use in the preparation of sports coaches.

Currently, the professional development process is integrated with new evaluative and value-based concepts, adopted from the perspective of sports management and quality, with the aim of placing the client's needs at the center of the activity. Other authors, such as Díaz et al. (2020); García et al. (2017); Millán et al. (2022) highlight their influence on professional problem-solving and in the field of action.

However, research on this issue does not always consider the demands and specificities of baseball coaches when designing training planning and its relationship to existing teaching categories, based on the characteristics of practice in the pitching area.

In this sense, among the research that addresses this topic are those of García et al. (2021); Ogando et al. (2018); Pérez et al. (2020); Ruiz (2018) that assume the solution to various professional problems, to perfect their work, from different theoretical positions, which makes evident the intention of contributing increasingly to the preparation of these professionals.

An analysis of the aforementioned studies shows that they do not meet the current professional demands placed on baseball coaches; therefore, the capacity to define procedures for training pitchers in the U-12 age group is insufficient.

For this reason, these professionals do not have sufficient tools to integrate the knowledge associated with the use of planning systems, determining training directions, load dosage and their corresponding relationship with the establishment of objectives and methods, in accordance with the characteristics that distinguish the sports practice they direct.

Meanwhile, the transformative approach to baseball in the sport's initiation involves greater mastery of planning and engagement systems to conceive training in the pitching



department. This entails the transformation of coaches as key players, making the professional development process one of the key issues for perfecting their performance.

In this sense, baseball-related research by Cordero et al. (2019); Labrador et al. (2016); Montero et al. (2017); Pérez (2020) provides a system of exercises and addresses the study of sports identity, thinking, and player effectiveness. Meanwhile, Cárdenas et al. (2019); García and Cordero (2020) work on control and evaluation, and Cudeiro et al. (2020); Cudeiro and Trejo (2020); Gamez et al. (2021); Pons et al. (2021) point to the sports selection.

It is important to highlight that the research analyzed primarily focuses on pitchers at different ages and provides solutions to a group of recognized problems based on the aforementioned contexts. However, the elements that underpin training for pitchers in the U-12 age group and how to make it effective for professional development constitute an essential aspect.

Hence, the criteria presented make it possible to rethink the didactic preparation of the baseball coach, with the aim of harmoniously reconciling training planning, associated with the use of objectives and methods in relation to the existing requirements that distinguish practice in the initiation stage of sports.

The theoretical analysis reveals a number of shortcomings that undermine the baseball coach's performance. It reveals limitations in the use of teaching resources associated with the requirements of training planning and organization, in line with the characteristics of the introductory stage of the sport; in knowledge about the use of load dosage and its components; in the selection and application of methods; in the use of time during the classes they lead; as well as theoretical and methodological shortcomings associated with the understanding of training planning and its teaching requirements.

Therefore, based on the current situation, the objective was to establish a theoretical model with a new vision of the professional development process of the baseball coach.



MATERIALS AND METHODS

The research was qualitative, lasting six months, from January to June 2023. The population consisted of 54 baseball coaches from the U-12 age group, belonging to the 17 sports teams located in the five districts of the Santiago de Cuba municipality, Cuba.

Of the 54 coaches participating in the study, 27 had between two and five years of experience working in the under-12 category (50%), 20 had between seven and 10 years (37%), and seven had more than 10 years (13%). Of these, 52 held degrees in Physical Education (5) and two held Master's degrees in Community Physical Activity.

The research was based on the dialectical-materialist conception, from which the following research methods and techniques were conceived, applied and interpreted:

Theoretical methods

Analytical-synthetic, to analyze the characteristics of the professional development process, with a view to making theoretical-conceptual generalizations based on research conducted at the national and international levels.

Systemic-structural-functional, for the construction of the model, by determining the functions of each of its subsystems and components, expressed in the relationships established between these and the hierarchical and coordination levels that led to the transformation of the object.

Modeling, to establish through the professional development model the different subsystems that described the dynamics of epistemologically related functions, in which symbiotic and dialectical connections were established based on the transformation of the reality addressed, from the interpretation of the complexity of its components, with the consequent synergy of theoretical construction in addressing the problem.

Empirical methods and techniques



Observation, total of 103 classroom observations were conducted throughout the research process, in which 26 teaching indicators were evaluated to assess the quality of training activities for baseball pitchers, as well as the coaches' actions in relation to the use of teaching resources used during classes.

Documentary analysis, for the review of professional development plans provided for the preparation of baseball coaches, through methodological preparation and self-improvement, to establish an analysis based on normative aspects and established regulations, and to determine possible limitations related to the treatment of teaching resources as fundamental content.

A survey conducted by baseball coaches comprised of eight questions, addressing their professional development process, organizational methods, and the development of the various topics taught, as well as the introduction of new topics based on their professional interests.

Expert criteria, 30 experts were selected, 21 of whom, or 70% of the total, held a PhD, and nine held a master's degree, or 30%, all with professional experience ranging from 10 to 56 years.

Fourteen experts were selected, 47% of whom held the teaching rank of full professor; three, 10%, were assistant professors; 10, 33%, were teaching assistants; and three, 10%, were uncategorized. In this regard, it was important to highlight their experience in organizing postgraduate programs and processes associated with training baseball pitchers. This allowed for a critical assessment of the theoretical and methodological framework of the professional development model, with the aim of contributing to its refinement during its design.

Statistical methods:

Descriptive statistics used percentage calculations to analyze the data obtained, applying empirical methods and techniques to reflect a percentage assessment of the main characteristics of the population of baseball coaches involved in the research.



RESULTS

In order to assess the current status of the coaches in the baseball pitching area, under 12 years category, associated with their didactic preparation, instruments were applied to determine the current limitations, such as in the observation of classes taught by baseball coaches, in the pitching area with:

- Insufficient correspondence between existing planning and the development of activities in practice.
- The methods used were not sufficiently related to the development of training directions.
- Insufficient actions to address error correction.

Results of the documentary review of the development plans for baseball coaches in the under-12 age group of the Santiago de Cuba municipality:

- Existing professional development programs and plans did not prioritize teaching, conceiving training as a system of knowledge that would enhance the preparation of coaches.
- The planned content was somewhat schematic, failing to take into account the needs of baseball coaches and the context in which they participated.

Results of the survey conducted among baseball coaches on professional development:

- Most respondents reported that the professional development activities they received did not provide adequate didactic preparation.
- There was a lack of topics related to training planning in the area of baseball pitchers.
- The professional needs of baseball coaches were not prioritized.

Through methodological triangulation, based on the various empirical methods and techniques applied, the most recurrent manifestations presented by baseball coaches were identified:



- Persistence of linearity and traditionalism in the development of baseball coaches.
- Limitations in conceiving training in the area of pitching and in harmonizing individual and collective work required in baseball as a team sport.
- Predominance of reproductive activities during training, which limited meaningful learning in baseball players.
- Lack of mobilizing educational alternatives to diversify activities during training.
- Limitations in the development of the general training preparation plan and its correspondence between the aspects that comprised it, as well as its relevance to the demands of the sports initiation stage.
- Baseball coaches showed limited teaching resources for conceiving knowledge transfer, associated with the requirements of planning and dosing loads in the pitching area.

Professional development model for the baseball coach

In this sense, the scientific foundations determined through theoretical and methodological systematization, as well as the results derived from the application of research techniques, constituted the basis for identifying the theoretical premises, the product of profound reflection, logical assessments, and conclusions in the dialectical relationship between theory and practice. Consequently, the following were declared:

- The theoretical and methodological conception of the professional development process for didactic preparation based on the demands of the professional practice of baseball coaches, with a contextualized, situational, and participatory approach, as well as promoting the best teaching and sports practices of the professionals involved.
- The didactic preparation of baseball coaches was considered to be the aspect that allowed for the harmonious articulation of general and special didactics of sports training with those specific to baseball.
- The didactic systematization constituted a procedural tool in its cognitive and praxiological dimension, to transversalize and interrelate the subsystems of the model.



- The model made up of subsystems and components was considered from a dialectical perspective, in relation to its objectives and purpose for the didactic preparation of baseball coaches, expressed from a reflective practice which required organizational, procedural and praxiological treatment.

The starting point was the professional development model, which was distinguished by its specific, integrative, and formative nature, encompassing the characteristics of the professional context in which baseball coaches operate. It was represented as a theoretical and methodological construct that revealed the relationships that allowed for the progressive, oriented transformation of the object, enabling a simplified understanding of existing reality, with a logical order and sequence.

From the foundations of the modeled process, professional development was assumed to be a reflective practice, and a starting point was established for constructing the theory. The model outlined the essential aspects that fostered a new perspective, starting with the establishment of the organizational subsystem as the input element; the procedural subsystem as the highest-ranking component; and the praxiological subsystem as the model's output. All of this was energized by didactic systematization, while its distinctive logic expressed the resulting quality of the improvement of the professional development process aimed at the didactic preparation of baseball coaches.

The model, in its systemic structure, constituted a new approach to the professional development process, based on a reflective practice linked to thought, generating solutions and alternatives based on the baseball coaches' own professional experiences, in the sense of helping them think, with a personal commitment oriented toward learning and continuous improvement, and the incessant search for information with a deep commitment to discovery and analysis. This process was shown to be the main stage through which knowledge was updated and reflection on, from and for the professional problem was achieved.

In this sense, professional problems served as benchmarks for improvement, expressing the dialectical contradiction between possibility and reality. This, in the workplace, posed a way



of learning through practice, a space for reproducing problems in their real-life form, and required integrated knowledge and skills as a whole. Hence, the need to model professional development focused on reflective practice, with the aim of guiding the skills of coaches in the U-12 baseball pitching division, with implications for their actions.

Approaching the professional development process from this perspective fostered the subject-object relationship within the profession and simultaneously constituted a driving force that generated its own development and internal dialectic, helping to resolve the existing contradiction and achieve the expression of change and transformation among baseball coaches. The reflective approach to addressing professional problems was implicated in the logic and dynamics of each of the subsystems, which defined the specific nature of the modeled process.

For its part, the organizational subsystem constituted the entry point in the professional development process and involved projecting oneself into the future by carrying out a series of essential actions, such as establishing the objectives to be achieved, setting deadlines, and establishing the conditions for their execution.

The structure of this subsystem was expressed in the relational integration between the components: diagnosis of professional needs, registration of professional problems and identification of the object of improvement, which had its output through management projection, which determined the internal logic of the organizational subsystem, from the coordination relationships manifested.

By expressing the explanatory logic of the organizational subsystem, the dialectical relationships existing between the components were evidenced, with the management projection, and the conceptual bases of the professional development process that conditioned the establishment of the procedural subsystem were established as an aspect whose structure and system of relationships between the components that formed it revealed its internal dynamics.



The procedural subsystem assumed the function of organizing and interrelating the contents involved in the didactic systematization, embedded in the cognitive-procedural tools that formed part of the professional development process. Thus, professional problems were considered the essential aspect that guided the modeling process.

In its structure, the gnoseological, sports technological and methodological components were conceived, mediated by the coordination relationships, which in turn determined their output through the instrumental cognitive aspect, which influenced the quality of the professional development process of baseball coaches. From this logic, the interconnection between the components of this subsystem determined the action of the modeled object and in turn, gave way to the praxiological subsystem, supported by the realization of the practice of the process object of study.

The praxiological subsystem constituted the output element in the modeled process and had the function of conditioning the possible spaces and concrete forms of materialization of the professional improvement of the coaches of the baseball pitchers area, category under 12 years that revealed the practice as a criterion of the truth, by demonstrating how the process is carried out in function of developing the knowledge, skills and know-how, in its fundamental purposes and goals and in the implication of the didactic systematization, as an aspect that determined the functioning and dynamics of the activities to be carried out.

The subsystem involved the components forms of instrumentation, evaluation and the mode of professional performance, in which coordination relationships were manifested, from the intra-systemic synergy, where the professionalization of improvement emerged as the output of the subsystem and allowed considering the process of professional improvement, from a reflective practice, for baseball coaches.

For its part, didactic systematization was assumed as a procedural tool to transversalize and interrelate the subsystems of the model, as a distinctive element in the professional development process, with a complex and enriching character and a space for transforming thought.



Considering the tasks of relating, organizing, and analyzing from their practice, in order to foster interpretive, reflective, and creative skills, with the purpose of generating new knowledge from existing knowledge, favored the actions of baseball coaches, expressed in greater mastery, contextualization, and argumentation reflected in their professional work.

The resulting quality was an expression of the superior state that emerged from the model's existing system of relationships, as the perfection of the professional development process aimed at the didactic preparation of baseball coaches. The epistemic concretion referred to demonstrated the reflective and transformative scope that made it possible to place the needs of the subject of professional development at the center, from their conscious and self-regulating personal involvement, in order to evaluate progress and limitations, and achieve elevated levels of regulation of knowledge, of themselves, and of their professional limitations and progress.

This condition also allowed for the recognition of professional development as a necessary, ongoing practice of knowledge management for problems in the work environment, of professional review and analysis, of constant updating of knowledge, of decision-making and professional self-improvement, and as a process to be improved through the involvement of didactic preparation to meet the professional demands presented by coaches in the area of baseball pitchers, under-12 age category.

In this sense, the concretization of the model, which became its resulting quality, fostered a transformation in the coaches' actions, as a clear and conscious expression of the achievement of a new, transformed professional, capable of conceiving training with sufficient resources from a didactic perspective, with advanced progress through the appropriation and implementation of new forms of efficiency in their professional work. Their achievement suggested a satisfaction of professional fulfillment, critical reflection related to their context of performance, commitment and dedication in the execution of professional tasks, mastery of knowledge and skills, adequate communication skills, and a marked tendency toward self-improvement.



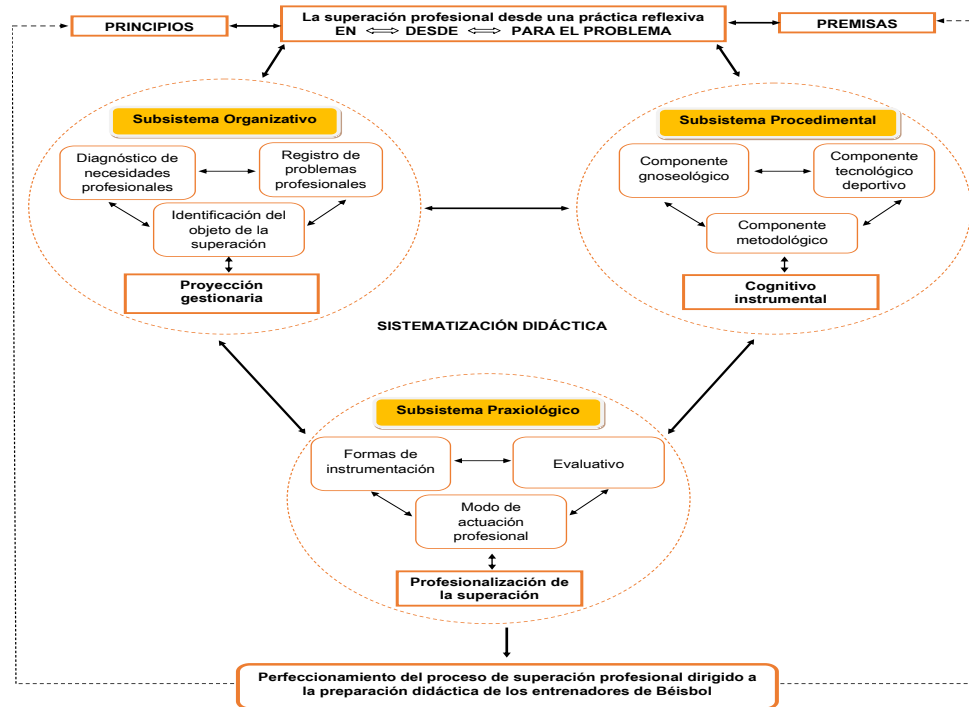


Figure 1. Professional development model for the baseball pitching coach, under 12 age category

A theoretical assessment was carried out, with the purpose of evaluating the model through the criteria of experts in the use of the Delphy method, applied in three rounds in order to perfect the theoretical construction process, based on the proposed criteria and recommendations.

The use of statistical techniques allowed for the processing and interpretation of the results of the application, considering knowledge of professional development design as a fundamental selection criterion for the survey administered to the 30 experts involved in the research. The data were processed using the experts' assessments of the five indicators that evaluated the formal quality of the professional development model, with the following results:





Figure 2. Results of the three rounds applied to the experts

Regarding the first parameter, 23 experts (77%) rated it as very adequate, with a good correlation between the aspects covered; 23%, meanwhile, identified it as fairly adequate, due to the favorable treatment of the theoretical conception regarding the organizational subsystem of the professional development model.

In the second aspect to be evaluated, the theoretical conception of the procedural subsystem in the professional development model was analyzed. 80% of the experts rated it as very adequate; 17% as fairly adequate; and 3% as adequate.

For the third aspect, 80% rated the considerations referred to in the praxiological subsystem as very adequate; and 20% rated them as fairly adequate. Parameters four and five showed fairly consistent criteria, with 87% and 70% of experts rating them as very adequate; and 13% and 30% rated them as fairly adequate.

Based on the analysis of the five aspects that reflected the relationships and foundations of the professional development model, solid criteria were identified, with high percentages of acceptance and agreement regarding the role of the proposed professional development model, the system of relationships that functionally shaped it, and the dynamics that



allowed for its internal movement. This demonstrated its integrative and pertinent nature for addressing and solving the current problems from a theoretical perspective.

The model's purpose was to refine the professional development process, using a systemic approach and using didactic systematization, as this was the element that presented the greatest difficulties in the diagnosis of baseball coaches. Its system of relationships conceived the interaction between the subsystems that represented the expression of the gradual and upward transition to professional development, and the essential aspects of this process were also outlined.

The modeling process was designed based on the professional needs of baseball coaches, which identified the achievements and shortcomings of the participants' work. The didactic aspect gained importance as a component that guaranteed the development of skills for successful performance and helped eliminate repetitive and formal tendencies. This allowed for a high degree of independence in knowledge production and provided professional encouragement, broadening the coaches' cognitive and cultural horizons from a scientific perspective, with the aim of enhancing their intellect and professional performance.

DISCUSSION

Related to the professional development process, the research of Gálvez et al. (2018); Lanza et al. (2019); Torres et al. (2022) were considered important, as they focused their attention on the development of human resources. On this basis, professional development was conceived as a process to meet the needs of participants and delve into contradictions, even those related to the particularities of meeting the professional demands of baseball coaches.

In the researchers' opinion, professional development was an unavoidable necessity, which required innovative proposals for professional improvement, with alternatives consistent with the requirements of the baseball coaches' context, based on the use of educational resources to design training for pitchers in the under-12 age group.

The current concept of self-improvement for physical education professionals has not always been optimal in relation to the demands and constant changes taking place in



contemporary sports, particularly in baseball, where training is of irreplaceable value in the introductory stage of sports, as a crucial phase for developing more general sports skills and basic knowledge.

In their studies, Arencibia et al. (2018); Lanza et al. (2019); Mohamed et al. (2022); Vergara et al. (2023) pointed out limitations in the management of the human resources development process, without specifying the specificities of the coaches' professional activity.

The analysis provided an important reference for determining the foundations of the baseball coach's professional development process. From this perspective, the limitations outlined by several authors regarding this process became evident. Therefore, it became necessary to structure proposals for coordinating diverse knowledge and conceiving it in a specific and integrative manner. This will empower coaches with autonomy, mastery, knowledge, and creativity, in order to efficiently design the training process for pitchers.

The above suggests that this process should have been tailored to the diverse forms, social relevance, and interests of those involved. In this way, it contributed to the development of baseball coaches by perfecting the professional development process, based on the use of new knowledge that favored the fulfillment of their social role, thereby ensuring the achievement of professional prestige.

CONCLUSIONS

The study of the theoretical backgrounds of the professional development process allowed to determine the limitations, from its conception, in meeting the professional demands of the baseball coach, based on the new logic of attention to didactic preparation, with satisfactory progress and new relationships that contributed to perfecting the process studied, as a guarantee of the efficiency of its structure and operation.

The theoretical model presented offered the systemic logic of the professional development process, revealing new dialectical relationships energized by didactic systematization to enhance the preparation of baseball coaches to address their professional work with greater commitment and efficiency.



The criteria issued by the experts agreed that the professional development model for baseball coaches had a new theoretical rationale that contributed to the improvement of the process studied and provided a new vision that allowed this professional to appropriate teaching resources in the fulfillment of his social role.

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The author is responsible for writing the work and analyzing the documents.



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