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Professional development model for the lead Physical Education teacher

[Modelo de superación profesional para el profesor principal de Educación Física]

[Modelo de desenvolvimento profissional para o professor coordenador de Educação Física]

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ABSTRACT

Introduction: the professional overcoming constitutes the essential road to prepare the principal professors of physical education of the sports combinations in terms of directing the methodological work

Aim: to explain the components of the model of professional overcoming for this professional from the integration of pedagogic, scientific methodological, and sported motor skills.

Materials and methods: Several methods were used during the development process: analytical-

synthetic, inductive-deductive, systemic-structural-functional, modeling, and expert opinion. These methods enabled the determination of the epistemological foundations, as well as the categories that emerged during the research process.

Results: The model consists of the following subsystems: formative intent of preparation for methodological work management, interpretation of content in preparation for methodological work management, and systematization of content in preparation for methodological work management within the professional context. These subsystems clarify the professional development process for this professional.

Conclusions: The elaborate model allows establishing the structural and functional relations between the subsystems during the professional overcoming of the principal professor of physical education for the improvement of their professional performance for the direction of methodological work. His feasibility is corroborated by the specialists' opinion.

Keywords: performance professional, model, professional overcoming.

RESUMEN

Introducción: La superación profesional constituye la vía esencial para preparar a los profesores principales de Educación Física de los combinados deportivos en función de dirigir el trabajo metodológico.

Objetivo: explicar los componentes del modelo de superación profesional para este profesional desde la integración de lo pedagógico, científico-metodológico y lo motriz deportivo

Materiales y métodos: Durante el proceso de elaboración se emplearon varios de los métodos: analítico-sintético, inductivo-deductivo, sistémico estructural y funcional, la modelación y el criterio de especialistas, los que posibilitaron la determinación de los fundamentos epistemológicos, así como de las categorías que emergen durante el proceso investigativo.

Resultados: el modelo está constituido por los subsistemas: intencionalidad formativa de la preparación para la dirección del trabajo metodológico, interpretación del contenido en la preparación para la dirección del trabajo metodológico y sistematización del contenido en la preparación para la dirección del trabajo metodológico en el contexto profesional, los que explicitan el proceso de superación para este profesional

Conclusiones: el modelo elaborado permite establecer las relaciones estructurales y funcionales entre los subsistemas durante la superación profesional del profesor principal de Educación

Física para el mejoramiento de su desempeño profesional en la dirección del trabajo metodológico. Su factibilidad se corrobora a partir del criterio de los especialistas.

Palabras clave: desempeño profesional, modelo, superación profesional.

RESUMO

Introdução: O desenvolvimento profissional é essencial para preparar os professores de educação física líderes em complexos desportivos para a gestão metodológica do trabalho.

Objetivo: Explicar os componentes do modelo de desenvolvimento profissional para este profissional, integrando competências pedagógicas, científico-metodológicas e motoras relacionadas com o desporto.

Materiais e métodos: Foram utilizados vários métodos durante o processo de desenvolvimento: analítico-sintético, indutivo-dedutivo, sistémico-estrutural-funcional, modelação e opinião de especialistas. Estes métodos permitiram a determinação dos fundamentos epistemológicos, bem como das categorias que emergiram durante o processo de investigação.

Resultados: O modelo é constituído pelos seguintes subsistemas: intenção formativa da preparação para a gestão metodológica do trabalho, interpretação do conteúdo na preparação para a gestão metodológica do trabalho e sistematização do conteúdo na preparação para a gestão metodológica do trabalho dentro do contexto profissional. Estes subsistemas esclarecem o processo de desenvolvimento profissional para este profissional.

Conclusões: O modelo desenvolvido estabelece as relações estruturais e funcionais entre os subsistemas durante o desenvolvimento profissional dos professores de educação física para melhorar o seu desempenho profissional na gestão metodológica do trabalho. A sua viabilidade é corroborada pela opinião dos especialistas.

Palavras-chave: desempenho profissional, modelo, desenvolvimento profissional.

INTRODUCTION

Professional development in Cuba helps prepare administrators and teachers to face the rapid advances in science and technology of recent times, as well as to meet the

challenges that development itself imposes. Therefore, for the lead physical education teacher at the sports complex, this process requires the promotion of knowledge and continuous learning. systematic, based on considering the current levels of development of the knowledge society, which makes evident the need to enhance training processes on the search for new integrative and contextualized alternatives that respond to these needs and, in turn, acquire a high level of significance in their performance and in the solution of problems in their professional contexts.

In this regard, it is verified that several researchers propose concepts and models that contribute to the improvement and transformation of the professional performance of teachers and administrators, such as: Añorga (2012), Ramos (2022), Alfonso *et al.* (2023), Veitia *et al.* (2023), Méndez *et al.* (2024), Fernández (2024), Díaz (2025), Flérima (2025), Prieto (2025), Izquierdo (2025), Cervantes and García (2025), among others, to respond to this need. These researchers make significant contributions regarding the conception and organization of professional development, as well as the theoretical foundations for addressing specific content in improving the professional performance of teachers and administrators. However, further research is needed on those aspects necessary for the main Physical Education teacher to fulfill their professional functions at the Sports Complex.

This professional is responsible for the quality of the teaching and learning process of the subject by having a mastery of the necessary tools to be able to plan, organize, control and evaluate a successful methodological work together with their faculty, who are inserted in the different educational levels: early childhood, primary, special, secondary, pre-university, technical-professional and university; this shows the diversity of educational scenarios that they face and whose particularities they must know, for which they require in turn a preparation that results in an efficient performance in their professional context.

In this regard, researchers Figueroa (2017), Gómez (2018), Sánchez (2020), Véliz (2021), Silva (2022), among others, emphasize the crucial role in the preparation of teachers and administrators of assuming an appropriate conception of methodological work, which

allows them to update, improve, and transform the pedagogical actions of these professionals in their teaching-learning processes; necessary but insufficient contributions from an epistemological and methodological perspective to explain the content needed to direct this process and how to integrate it into professional development.

An analysis of the studies conducted by these authors reveals that the current approach to integrating content from pedagogical, scientific-methodological, and sports-related motor skills perspectives is insufficient to enable managers to fulfill this function within the sports complexes where they work. Therefore, this problem must be addressed scientifically to achieve a transformation in the professional performance of these managers, taking into account the professional context. This work, therefore, aims to evaluate the results of the validation process for the components and relationships established in the model that underpins this process.

MATERIALS AND METHODS

For this research, the 12 lead teachers from the municipality of Bayamo and the four from the municipality of Yara were intentionally selected as a sample, as they are part of the Physical Education and Sport for All research project led by the Faculty of Physical Culture of Granma. These teachers possess experience in their work, as well as mastery of the programs and functions to be developed in their sports complexes.

Among the methods used to obtain the results in the research is the historical-logical method, which allowed us to understand the evolution of the object of study related to the professional development of the main teachers, based on the analysis of its main characteristics and background, which allowed us to reveal its essential features in the professional context, and the systemic-structural-functional method, which made it possible to determine the relationships of coordination and subordination that are

established between the subsystems and components of the proposed professional development model, as well as its functional dynamics.

Meanwhile, modeling made it possible to determine the structural components of the proposed professional development model, as well as its defining characteristics and relationships. Systematization was used to organize knowledge in the search for theoretical references and foundations related to professional development and the professional performance of lead physical education teachers, guiding the methodological work.

The inductive-deductive and analytical-synthetic methods were also used throughout the research process for the evaluation and processing of the applied instruments, as well as in the design of the improvement model for the enhancement of the professional performance of the main Physical Education teachers.

As empirical level methods, documentary review was used to study the bibliography related to the investigated topic and obtain inferences related to the object and field of action that make it possible to conceive the categories of one's own in the improvement and professional performance of the main Physical Education teachers.

Once the model was developed, it was submitted to the consideration of specialists to find out their assessment of the proposal.

RESULTS AND DISCUSSION

Models allow us to clarify the dialectical progression of logical knowledge from the abstract to the concrete, from theory to practice, and have therefore become a key theoretical contribution to the study of educational phenomena and processes at different levels of education. They are so valuable that they enable us to analyze the relationships and characteristics of the educational process at the postgraduate level, by addressing the unique aspects that arise during the assimilation of content, moving from

intrasubjectivity to intersubjectivity through the exchange of experiences that occur there.

Models can serve various functions, including representing, explaining, guiding, predicting, evaluating, and/or creating reality. However, their primary function is recognized as understanding and explaining reality in order to make predictions and improvements.

In this sense, the author Colunga (2022) explains that the model is a theoretical construction that summarizes the essential characteristics of said object, in such a way that it surpasses or is significantly distinguished from the existing theoretical representations about it, which the author of the research shares and assumes.

In this sense, the presented model is considered representative of the professional development process for lead physical education teachers, viewed from a systematic, organized, and efficient teaching-learning process, based on theoretical foundations and implemented by specialized professionals. In this case, it responds to the specific characteristics and needs of their role in directing methodological work; therefore, it constitutes a representation of the essential features of this training process to achieve the goal of preparing the faculty in the various educational contexts of their school.

In accordance with the above and based on an in-depth study of the literature, the model was developed through an epistemological analysis that determined the following insufficiency:

The theoretical conceptions in the processes that underpin professional development have limitations in making explicit the relationship between the treatment of the pedagogical, scientific-methodological and the motor-sport aspects as a response to learning needs and the transformation of professional performance in the direction of methodological work as part of professional functions.

From the assessment of the theoretical framework and the factual diagnosis, it can be inferred that there are epistemological limitations; thus, the need for a model in pedagogical theory is justified that explains how to carry out this process of improvement of the main Physical Education teacher where this integration of knowledge and its impact on the improvement of their professional performance is evident.

Taking into account the above arguments, the criteria of the author Valle (2007) are considered for the construction of the model, which must contain the following steps:

- Objective: indicates what is intended to be achieved with its preparation.

Epistemological foundation: This includes the philosophical, sociological, psychopedagogical, and didactic assumptions that underpin it. The structural characteristics and rationale of the model are also explained.

Model construction and explanation of the dynamics between its subsystems and components: the elements that are interrelated, qualities and level of hierarchy are presented.

- Instrumentation: the criteria for its use and the variants for practical application are explained.
- Evaluation: the instruments to be applied to measure its effectiveness when introduced into practice are discussed

Therefore, the present model aims to: Explain the improvement process for the main Physical Education teacher, taking into account the integration of the pedagogical, scientific-methodological and motor-sports aspects, so that their professional performance in directing the methodological work with their faculty in the combined area is perfected.

Epistemological foundations of the model

The model stems from the need to improve professional performance in the direction of methodological work during the professional development of the main Physical Education teacher, which is revealed from the theoretical assumptions contributed to the training process in physical culture from several important references, since they provide the support that lays the foundation for articulating the development and how to carry it out in these professionals.

In terms of its philosophical foundations, the proposal is based on the dialectical-materialist conception of human activity, which allows us to understand that all knowledge unfolds as a process, moving from theory to practice and vice versa. This developmental process is evident in the model, through the interrelation between its components and subsystems, as well as among the qualities that emerge from its practical application during the transformation of this manager's professional performance at the Sports Complex.

From a psychological point of view, the historical-cultural approach to human development of Vygotsky and his followers (1985) becomes the fundamental reference, taking into account that postgraduate studies, as a process, develops in certain historical-cultural conditions and is, therefore, a social process, which has the purpose of transforming the personality of this professional, as well as their work and social environment, on the basis of an interaction and reciprocal influences between teacher and student, and between the students themselves.

Furthermore, the theoretical framework of Añorga's (2012) advanced educational theory highlights the relevance of this discipline to the postgraduate training of physical education teachers. This is because it allows for the identification of the potential benefits that mastery of the theoretical and methodological resources provides these professionals during their preparation for leading methodological work. Therefore, the model explicitly outlines the acquisition of knowledge within the teaching- learning process under study, based on the integration of pedagogical, scientific-methodological,

and motor-sporting aspects for the development of their professional pedagogical activity.

In this sense, of the guiding principles in this theory, for the constructed model, those that have methodological importance for its implementation are assumed, among them: the link of social relevance, objective, motivation (including activity, work, interests and personal social) and communication; the scientific character of the content, research and cognitive independence and production of new knowledge; the link of theory with practice in the formation of values and that of the conditionality between undergraduate, basic and specialized training (Añorga, 2012).

Furthermore, in the actions of this manager, the theory and methodology of Physical Education is an important premise, which is provided by the criteria of Ruiz and López (2016), regarding the means, methods and principles that govern this process, since they allow to demonstrate the possibility and need to integrate into the improvement process for this professional the diversity of elements that exist in the pedagogical and didactic order, in which the professional performance is materialized during the methodological work with his teachers.

Construction of the professional development model for the lead Physical Education teacher

For the construction of this model, the premises addressed previously are taken into account, in addition the professional performance in the direction of the methodological work in the improvement of the main Physical Education teacher is conceptually defined, and the role that the relationship between the unity of the pedagogical, scientific-methodological and the motor sports in his professional performance and the diversity in the direction of educational contexts where he directs the methodological work has in his development is explained, based on the subsystems formative intentionality of the preparation for the direction of the methodological work (knowledge) ; interpretation of the content in the preparation for the direction of the methodological work (know-how) ; systematization of the content in the preparation for the direction of the methodological work in the professional context (know-how to be) .

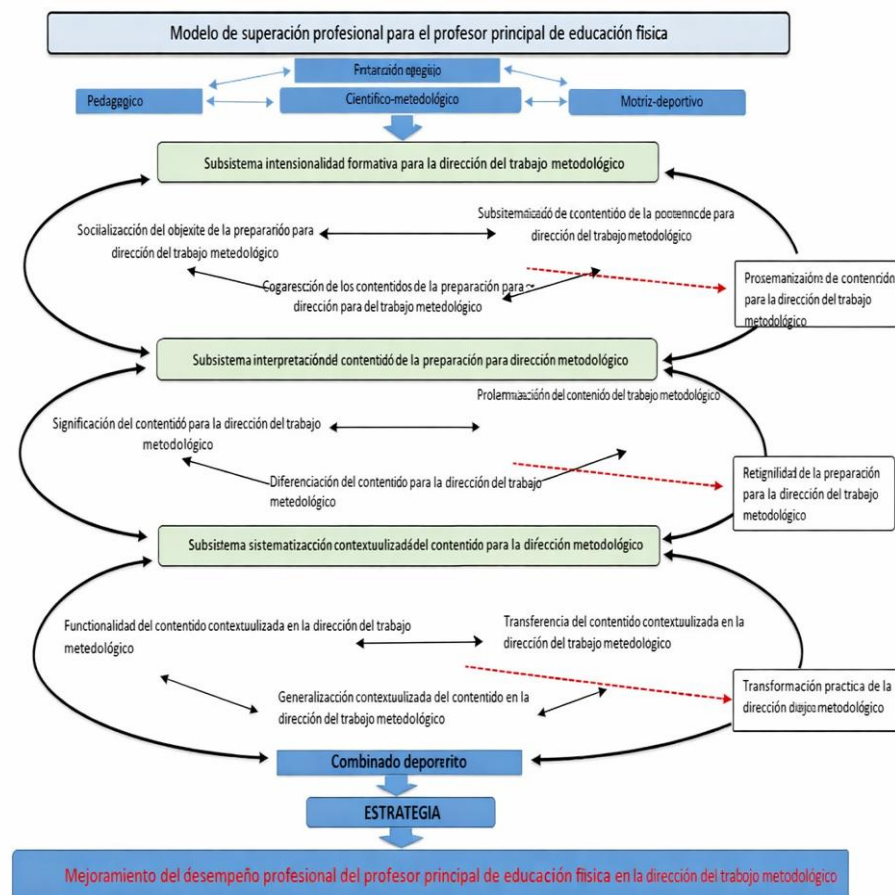


Fig. 1. - Professional development model for the main Physical Education teacher

The model presented is representative of the professional development for the main Physical Education teacher, which makes it clear that the integration of pedagogical, scientific-methodological and motor sports content guarantees the general resources that this professional requires in his preparation, and therefore, that in his appropriation they have a significance for his performance in the direction of the methodological work with his teachers in the Sports Complex.

In this sense, the direction of the methodological work carried out by the main Physical Education teacher is the process that, based on the results of the teaching and learning process and through the application of an appropriate diagnosis, allows him to organize, plan, control and evaluate the methodological activities that he systematically and

systematically carries out with his teachers at the Sports Complex, in a way that makes it possible to solve professional problems from a teaching and scientific methodological perspective in the various educational contexts, as well as to continuously improve the quality of the Physical Education class and the comprehensive training of the students.

Based on the elements addressed, the research assumes that the improvement of professional performance in the direction of the methodological work of the main Physical Education teacher is the degree of mastery and suitability achieved by them to organize, plan, control and evaluate with a scientific and methodological approach the methodological activities that they carry out with their staff in the various educational contexts in a way that contributes to the improvement of preparation from the political-ideological, scientific-technical, pedagogical methodological point of view, as well as guaranteeing the transformations aimed at the efficient execution of the teaching-learning process during the educational teaching activity inside and outside of schools.

Once the model was constructed, it required validation by specialists to verify its reliability. Therefore, expert judgment was applied based on the logic proposed by Fleitas, Mesa, and Guardo (2013), and the Chanlat matrix forecasting technique, adopted by Olivera (2018), was used for its evaluation. This technique aims to determine the expected relevance of the model (PEM). In addition to the survey administered to the specialists, they were provided with a summary of the professional development model for lead physical education teachers so they could express their opinions and suggestions for refining the proposal.

For this purpose, 20 specialists were selected, meeting the requirements of having more than ten years of experience in the sector, knowledge of the subject, scientific and academic standing, and a willingness to participate in the research. Thirteen PhDs in Physical Culture Sciences, four PhDs in Pedagogical Sciences, and three Master's degree holders, all from the Department of Theory and Practice of Physical Education, were selected for the research.

The proposed model was shared with all participants so they could provide their feedback on the three variables designed for this purpose: functionality (F), related to the objective to be achieved; opportunity (O), referring to its suitability for implementation in the professional context; and impact (I), focused on the model's influence on transforming the professional's performance during methodological activities at the Sports Complex. The specialists' evaluation made it possible to prescribe the expected relevance of the model (PEM), and then make adjustments based on the suggestions provided. The following formula is used to calculate the expected relevance of the model: $PEM = F \times O \times I$ (impact, functionality, opportunity) / 100.

According to the aforementioned author and other scholars of the Chanlat matrix, the classification of relevance results is used in the following ranges:

- If PEM is greater than 8, the model is considered strong.
- If PEM is between 5 and 7, the model is considered average.
- If PEM is less than 5, the model is considered weak.

Once the instrument has been applied, the statistical analysis of the results shown below is carried out (Table 1):

Table 1. Results of the expert criteria

Variable	Weighing	Classification
Functionality	9.2	Strong
Chance	9.5	Strong
Impact	9.4	Strong
Total	8.2	Strong

Sorche: own elaboration

In accordance with the results shown in Table 1, it is possible to consider that the model is strong and meets the necessary requirements to be implemented, taking into account the aspects evaluated and, in addition, because it complies with the following aspects:

It takes into account the context of action and the experience of the teaching practice of these professionals, as well as their needs and interests for professional development, the resources available and their possible development.

It provides a framework for the training process for competence in methodological work management and a guide to enhance its development.

It serves as a guide to the professional development department of the organization: Provincial Directorate of Sports in Granma, for the design of professional development and methodological activities in accordance with the preparation and experience of the managers, the teaching category and the needs detected.

It allows for the consideration of other indicators for the manager's development plan and their annual evaluation.

It enables the design of strategies to increase research in Physical Education.

It promotes the systematization of collaborative work between managers and teachers in their context of action.

In general, the criteria support that the professional development model for the main Physical Education teachers of the sports complexes meets the following requirements: current, novel, relevant, useful, feasible, significant, generalizable, satisfies the needs for improvement and has scientific rigor, as well as that the relationships established within it allow verification of a qualitatively superior level in the transformation of their professional performance in the direction of methodological work in the Sports Complex.

CONCLUSIONS

The research outlines the modeling process and, as a result, the professional development model for the main Physical Education teachers of the Sports Complexes.

The results obtained from implementing the expert criteria validated that the presented model is feasible in terms of structure, foundations, logical ordering of components, relationships, feasibility of application and generalization.

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Conflict of interest:

The authors declare no conflicts of interest.

Authors' contribution:

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



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