

***El trabajo independiente con enfoque interdisciplinar: su
metodología en el colectivo de año***
***The independent work with an interdisciplinary approach: its
methodology in the collective of the year.***

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Resumen

En el presente trabajo se incursiona en la línea de investigación, la formación permanente e integral del profesional en la Educación Superior, desde el trabajo metodológico. Se constata en el diagnóstico preliminar, la carencia de un enfoque interdisciplinar del trabajo independiente, para este fin, se diseñó una metodología de orientación del trabajo independiente con enfoque interdisciplinar en el año académico de la carrera Cultura Física que responde a la necesidad de proponer vías a los docentes en el año para perfeccionar el trabajo metodológico. Los procedimientos empleados permiten fundamentar el resultado científico, determinar las regularidades en la práctica y procesar los datos. Por los resultados del criterio de expertos y el cuasi experimento se considera factible la propuesta para su implementación en la práctica social.

Palabras clave: Metodología; Modelo didáctico; Base orientadora, Contextualización orientadora; Proceder orientador contextual.

Abstract

In the present work, the research line, the permanent and integral formation of the professional in Higher Education, from the methodological work, is explored. The preliminary diagnosis shows the lack of an interdisciplinary approach to independent work. For this purpose, a methodology was designed to guide independent work with an interdisciplinary approach in the academic year of the Physical Culture

course, which responds to the need to propose ways for teachers during the year to improve methodological work. The procedures used allow basing the scientific result, determining the regularities in practice and processing the data. Based on the results of the expert criteria and the quasi-experiment, the proposal is considered feasible for its implementation in social practice.

Keywords: Methodology; Didactic model; Orienting basis; Orienting contextualization; Contextual orienting procedure.

Introduction

The need to improve the methodological work for the treatment of contents must imply an interdisciplinary approach, which is an important aspect for students' learning. This integration favors a much deeper relationship between the subjects that make up the different disciplines and, in addition, the understanding of the relationships between them.

It is recognized that the work of the university teacher in the integral formation of the professional is perfected and consolidated from the interdisciplinary methodological work, due to its integrating and systemic character, in which planning, organization, design, evaluation, control and adequate preparation, constitute decisive factors in the integration of the didactic components of the teaching-learning process.

At present, there are research results about the development of methodological work from different aspects at the teaching levels, among them are those carried out by (Addine, Recarey, Fuxá, and Fernandez, 2020; Álvarez, 1999; Mingui, 2002 and Valdés, 2019), referents for this research, they lay the foundations, based on theoretical criteria, about methodological work; even though they do not define premises in relation to the methodology for its interdisciplinary orientation of independent work.

At the level of Physical Culture, they go deeper into this topic (Almirall and Zaldivar, 2018; Casero, 2022; Garvey, 2017; Machín, 2022; Milán, 2022; Mola, 2019 and Valdés, Bosque, Estradé, Guerra, and Rodríguez, 2021); said researchers contribute diverse ways from the professional's mode of action, disciplines and subjects. They offer models, methodologies, actions and tasks that favor the formation of the professional with emphasis on methodological work and the achievement of cognitive independence from interdisciplinarity.

In the researcher's opinion, in the investigations consulted, the aspect less worked within the methodological structure, is the independent work in the disciplines and year groups, and specifically, in its orientation from an interdisciplinary approach, direction to achieve to reach better results in the students' learning, so it is valid to specify the orientation in the internal aspect of the disciplines as an element that has been less studied.

The theoretical and methodological value of such inquiries on independent work is significant, but the concrete contributions for the orientation of independent work with an interdisciplinary approach in the academic year of the career are insufficient. These reasons support the need to deepen in the dynamics of this process, as well as in the improvement of the methodological work in the academic year of the Bachelor's Degree in Physical Culture.

These limitations indicate that the preparation process of teachers in the academic year lacks an adequate projection towards the orientation of independent work with an interdisciplinary approach, which demands a higher level of integration of the acting subjects, their mode of action, as well as changes in the conception of methodological work, especially in the discipline Methods of Analysis and Research in Physical Culture, taking into account the interdisciplinary approach in correspondence with the current demands and new contexts.

From this point of view, the theoretical and methodological treatment of the contents of the different disciplines favors the acquisition of the contents of the curriculum during the academic year. In spite of this, in practice there is evidence of shortcomings in this regard, since it is noted that the necessary linkage of all the disciplines that converge in the academic year is not achieved through the development and execution of independent work with an interdisciplinary approach.

As a result and reflection of such deficiencies, students show limitations in their professional performance from different spheres, hindered by a deficient orientation of independent work during teaching, extracurricular and extracurricular activities to solve the problems they are currently facing.

The above was corroborated on the basis of an initial preliminary factual diagnosis carried out during the research, as well as by the author's experience as main professor of the subject Research Methodology in the Faculty of Physical Culture of the University of Guantánamo, which has served as a basis for the design and execution of a diagnosis that made it possible to declare the following insufficiencies:

- Theoretical, methodological and practical limitations for the orientation of independent work with an interdisciplinary approach in the year group.
- Lack of methods and procedures for the orientation of independent work with interdisciplinary approach.
- Inadequate performance of students in the solution of independent work with interdisciplinary approach in praxis.

From the analysis of these inadequacies and of the investigations studied, it can be appreciated that the theoretical-methodological foundations are scarce, due to the lack of a systematized theoretical base that sustains the interdisciplinary orientation of independent work in the Physical Culture career.

The main theoretical inconsistencies in this regard can be summarized as follows:

- There is as regularity little theoretical and methodological treatment to the orientation of methodological work with an interdisciplinary approach.
- There is a lack of theoretical-methodological foundations that reveal the structural and functional relationships towards the orientation of methodological work with an interdisciplinary approach in the Physical Culture course.
- The orientation of methodological work with an interdisciplinary approach in the Physical Culture course requires a theoretical orientation towards its characterization since the academic year.

In accordance with the above, the following problematic situation is formulated, which is reflected in insufficiencies in the methodological work and the need to implement methodological tools that facilitate teachers to conceive a correct orientation of independent work with an interdisciplinary approach.

The arguments raised make it possible to state the following scientific problem: How to contribute to the orientation of independent work with an interdisciplinary approach in the academic year of the Physical Culture course?

In order to contribute to the solution of the declared scientific problem, the following objective was proposed: to elaborate a methodology, based on a didactic model that contributes to the orientation of independent work with an interdisciplinary approach in the academic year of the Physical Culture course.

Development

The construction of the methodology is based on theoretical references, highlighting the postulates of the historical-cultural theory of (Vigotsky, 1968), the foundations of the Cuban educational model established by (Addine and García, 2005), for its relevance and level of generality, in addition to the principles established by this same author.

The term methodology has had multiple definitions and interpretations, depending on the purpose for which it is established. Therefore, it has been approached by different authors, thus (De Armas, 2011) considers it as a systemic sequence of stages, which include actions or procedures that depend on each other and that allow the achievement of certain objectives.

The present methodology represents a practical contribution and is based on the relationships and theoretical postulates established in the proposed didactic model. They constitute requirements for the elaboration of the methodology:

- The definitions of: Guiding basis of independent work with interdisciplinary approach in Physical Culture and guiding contextualization of independent work with interdisciplinary approach.
- The mastery of the theoretical and methodological guiding documents that facilitate its elaboration and application.
- The determination of the level of integration or relationship between disciplines.
- The experience of the teachers of the academic year
- The characteristics of the levels of assimilation and learning in the groups of students in the first year of the Physical Culture course.
- The systemic character of the design by stages, inasmuch as each one has an objective and specific actions in which the interdisciplinary orienting corrective method is revealed
- The procedures for the orientation of the independent work with interdisciplinary approach in the organizational levels of the methodological work in the academic year of the Physical Culture course.

The objective of the methodology is: to contribute to the preparation of teachers for the orientation of independent work with an interdisciplinary approach in the first year group of the Physical Culture course for the improvement of methodological work.

The methodology goes through four stages that take as reference those assumed by (Milán, 2022) contextualized and transformed in the present research and that presents a set of actions and activities for the orientation of independent work with interdisciplinary approach in the academic year:

Methodology structure

1st stage: Involvement and sensitization for an interdisciplinary orienting projection.

2nd stage: Diagnosis and characterization for an interdisciplinary orientation training.

3rd step: Implementation from an interdisciplinary guidance concurrence.

4th stage: Impact assessment and interdisciplinary guidance correction.

These stages have a dialectic and interdependent relationship and comply with system principles. The following is a more detailed exposition of what happens in each of the stages of the methodology of orientation of the independent work with interdisciplinary approach in the academic year of the Physical Culture course. It starts from the general to the particular in terms of actions, procedures and recommendations for each of the stages. Then, specific actions are shown.

1st stage: Involvement and sensitization for an interdisciplinary orientation projection.

Objective: to sensitize the actors to the importance and significance of independent work with an interdisciplinary approach during the academic year in order to achieve involvement and commitment in theoretical and methodological action.

Actions of the projective sensitization and guidance stage

1. Exposure and previous reflexive analysis with the teachers of the 1st year collective on the need for the orientation of independent work with interdisciplinary approach for their sensitization.
2. Sensitization of teachers and managers on the need to design new methodological procedures for the orientation of independent work with an interdisciplinary approach where reflective, cooperative, interdisciplinary and guiding thinking prevails.
3. To promote the study of the theoretical and methodological foundations that support independent work with an interdisciplinary approach.
4. To promote the study of the theoretical and methodological foundations that support independent work with an interdisciplinary approach.
5. To raise awareness on the importance of obtaining information and instruction which will make possible the training based on the premises and principles on which the didactic model is based.
6. To methodologically organize the whole process to be followed, starting from determining the general methodological steps, the selection, elaboration or adaptation of the instruments to be used in the diagnosis, as well as the documentary, bibliographic and informative survey.

2nd stage: Diagnosis and characterization for an interdisciplinary orientation habilitation

Objective: to identify the constraints and needs associated with independent work with an interdisciplinary approach, to describe them and discover the potentialities of the actors, to characterize the state of the problem, in order to outline the conscious participation in the decision-making process for the implementation of the methodology.

Actions of the enabling and guiding diagnosis stage

1. Design of the assessment.
 - a) Definition of the objectives of the diagnosis.
 - b) Determination of diagnostic indicators.
 - c) Determining the methods and techniques to be used.
 - d) Delimitation of the sources of information.
 - e) Elaboration of instruments for the collection of information.
 - f) Preparation, coordination and assurance to guarantee compliance with the plan.
2. Application of diagnostic techniques and instruments.

- a) Applying the instruments elaborated for the diagnosis to the different sources of information.
 - b) Determination of regulation and control actions through the orienting corrective method to guarantee the fulfillment of the planned objectives.
3. Conclusions of the diagnosis.
- a) Processing and qualitative assessment of the information collected.
 - b) Identification of the needs for guidance of independent work with an interdisciplinary approach in the group of the year.
 - c) Preparation of the diagnostic report.
 - d) Elaboration of the characterization and proposal of implementation actions.

3rd stage: Implementation from an interdisciplinary orientation concurrence in physical culture.

Objective: to develop in practice the contextual guiding procedure of the didactic model from the perspectives on which its contextual knowledge and procedures are based. This allows being able to face the obstacles that appear in the methodological work.

Actions of the implementation stage for the contextual guiding procedure.

1. Based on the results of the diagnosis, characterization and proposal of implementation actions.
2. To favor a cooperative exchange and a reflective thinking where a guiding concurrence prevails.
3. Study of the normative documents to develop the methodological work.
4. Preparation and training of teachers and managers on the orientation of independent work with an interdisciplinary approach.
5. Strengthening group work to consolidate the mastery of interdisciplinary theoretical knowledge and the orientation procedure in the teachers of the year group.
6. Development of workshops to exchange experience on how to implement the orientation of independent work with an interdisciplinary approach.
7. Elaborate and execute the actions with the participation of students and teachers, taking into account the objective, the content, the form of the activities, the spatiotemporal context where the participants exchange, those responsible and the measurement criteria for the evaluation.

4th stage: Evaluation of impacts and interdisciplinary orientation correction in physical culture.

Objective: to democratize the evaluative process and stimulate the fulfillment of its functions (formative, control, feedback) through the concretization - interaction of the external and internal evaluation: hetero-evaluation, co-evaluation and self-evaluation.

Actions of the orienting corrective evaluation stage

For its development we take as a reference the proposals made by (Zaldívar, 2004) contextualized to the present methodology

Planning of the evaluation Project:

- To relate the results of the diagnosis with the objectives, adapting the problems and needs according to the objectives and the potentialities of their fulfillment.
- To specify the relationship between the objectives and the evaluation to be carried out.
- To specify the dimensions and indicators that determine the evaluation.
- To determine the measurement criteria for each indicator and the gradation to be given to the intensity or depth.
- To specify the types, forms and frequency of controls, achieving the required systematicity and rationality.

Systematic collection of information

- Written commitment of each of the participants on the reliability of the information.
- Application of the instruments and development of the workshops to socialize the results, the actions to be developed and the date on which they will be carried out.
- Collection and systematization of the results of the techniques and means used.

3. Analysis and evaluation of the information obtained

- Detailed analysis of the achievements and difficulties, determining the causes.
- Determination of positive and negative changes based on the comparison of the initial diagnosis with the current one to verify the changes.
- Analysis of possible inadequacies and difficulties in the teacher's pedagogical direction: planning, organization and execution.
- Determination of the facilitating and resisting forces to change in the process.
- Analysis of the achievements and successes of the pedagogical direction of the academic year and the implementation of the methodology.
- Determine the impacts it has had on the individual and collective level.

4. Decision-making and readjustment of the process

- Conduct a detailed analysis of the main difficulties encountered in the implementation of the methodology and their possible causes.
- Decide on the ways and procedures to be used to correct and how they will be implemented.
- Readjust the process on this basis by proposing changes to the project and how they will be implemented.

In this sense, for decision-making and readjustment, the active participation of those involved must be achieved. These stages are dialectically interrelated in a systemic way, and their success depends on the protagonism of those involved, based on self-evaluation, co-evaluation and heteroevaluation.

Main results obtained with the application of the methodology

Regarding the possibilities offered by the methodology for the practical implementation of the model, 14 (93.3 %) experts rated it as very adequate and one (6.6 %) as adequate. The criteria were favorable when considering that the correct design guarantees its adequate practical application since it integrates the methodology to the model and specifies the function of the stages to materialize the orientation of the independent work with interdisciplinary approach in the first year group.

The experts recommended making explicit the orientations of the methodology according to the orientation and the interdisciplinary approach as a complement or result of the subject collective meetings in order to continue perfecting the scientific results of the present research.

In relation to the aspects of the conception and structure of the methodology, the following were valued: the objective, structuring by stages, containing actions and activities, the orientations for the implementation of the methodology, as very adequate for their contribution to a better preparation of the teacher for the orientation of the independent work with interdisciplinary approach and to improve the methodological work from a didactic management in the academic year.

The statistical analysis of the results obtained with the application of the expert method, with the use of Green's methodology, allowed determining the consensus regarding the level of relevance of the aspects evaluated by the experts. All the experts agree that the methodology constitutes a working tool for the preparation of the teacher for the orientation of independent work with an interdisciplinary approach in the academic year of the Physical Culture course, thirteen of them evaluate it as very adequate and two of them classify it as adequate.

For the quasi-experiment, controlled variables were determined during its execution. As dependent variables were defined the preparation of the teacher for the orientation of independent work with interdisciplinary approach in the year group of the Physical Culture course and the improvement of the orientation of independent work with interdisciplinary approach in the academic year of the Physical Culture course, as independent the methodology for the orientation of independent work with interdisciplinary approach.

For the final evaluation of the development achieved by the teachers, the same dimensions, indicators and categories were taken into account as in the initial evaluation; the following results were obtained:

The dimension "Interdisciplinary theoretical-methodological knowledge" was evaluated as excellent by 92.8% of the teachers and managers, the remaining 7.2% evaluate it as good.

The guiding dimension "Interdisciplinary procedural" was evaluated as excellent by 85.7% of the teachers and directors and the remaining 14.3% as good.

In the variable "Improvement of the orientation of independent work with interdisciplinary approach" through the dimension "Evaluation and control of the orientation of independent work with interdisciplinary approach in the 1st year of the Physical Culture course" is evaluated as excellent by 90 % of the teachers and managers, one manager (5 %) evaluates it as good and another one as fair (5 %).

The comparative statistical study of the results of the pre-test (Prep.) and post-test (Postp.) by dimensions yields relevant results as shown in the following tables:

Table 1 Theoretical-methodological interdisciplinary knowledge

Año	2022		2023	
Prueba	Prep	Postp	Prep	Postp
Promedio	3,2	4,1	3,4	4,7
Tendencia	3,2	4,2	3,3	4,6
Diferencia	0,0	0,1	0,1	0,1

Source: own elaboration

Table 2 Interdisciplinary procedural

Año	2022		2023	
Prueba	Prep	Postp	Prep	Postp
Promedio	3,2	4,0	3,4	4,6
Tendencia	3,1	3,9	3,4	4,7
Diferencia	-0,1	-0,1	0,0	0,1

Source: own elaboration

Table 3 Evaluation and control of the orientation of independent work with an interdisciplinary approach.

Año	2022		2023	
Prueba	Prep	Postp	Prep	Postp
Promedio	3,2	4,1	3,4	4,8
Tendencia	3,3	4,1	3,4	4,8
Diferencia	-0,1	0,0	0,0	0,0

Source: own elaboration

In order to provide comprehensive information on the application of the methodology, after the quantitative analysis carried out, the qualitative expression of the main results is summarized below:

- The quantity, diversity and quality of the actions and activities for the orientation of independent work with interdisciplinary approach in the first year collective.

- The participation of teachers in the planning, organization and development of activities for the orientation of independent work with an interdisciplinary approach.
- The level of knowledge of teachers and managers about the methodological work for the orientation of independent work with an interdisciplinary approach in the first-year group.
- The articulation, intentionality and integrality in the procedures to be used for the orientation of independent work with interdisciplinary approach.

Conclusions

The practical concretion of the model, from the partial application of the methodology, allows enhancing the guidance of independent work with interdisciplinary approach in the group of students, thus favoring the development of knowledge, skills and abilities in students that enable them to perform in accordance with current social and professional demands.

The relevance of the model and methodology was determined by a predictive way through expert criteria, which demonstrated the viability, objectivity, clarity and methodological rigor. Likewise, the functionality of the methodology was evaluated in a practical way by means of its implementation through a quasi-experiment, which constitutes an alternative solution to the scientific problem revealed in the research and the stated working hypothesis is accepted.

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