

## Modeling of Training Management in Scientific- Methodological Work in Health Sciences

Modelación de la gestión formativa en el trabajo científico-  
metodológico en ciencias de la salud

Yusimy Barrios López<sup>1\*</sup> <https://orcid.org/0000-0003-0117-9543>

Celia Teresa Ledo Rollo<sup>2</sup> <https://orcid.org/0000-0002-4695-8260>

<sup>1</sup> University of Medical Sciences of Santiago de Cuba. Dr. Joaquín Castillo Duany Teaching Hospital. Santiago de Cuba. Cuba.

<sup>2</sup> University of Oriente. Santiago de Cuba. Cuba

\*Corresponding author. Email: [yusimy.barrios@infomed.sld.cu](mailto:yusimy.barrios@infomed.sld.cu)

---

### ABSTRACT

**Background:** in health sciences, there is insufficient articulation of teachers' research work with the quality of the educational teaching process due to limitations in scientific-methodological work and in the procedures for training management within methodological work.

**Objective:** to design a training management model aimed at health sciences teachers for scientific-methodological work.

**Methods:** a qualitative investigation was conducted at the University of Medical Sciences of Santiago de Cuba in 2023-2024. Theoretical methods were used: holistic-dialectical, hermeneutic-dialectical, and induction-deduction; and empirical: documentary review, which allowed for grounding the research and designing the proposal. Validation was carried out through 12 experts, university professors in health sciences, with high scientific qualifications.

**Results:** the model was structured into two dimensions and six configurations whose dialectical relationships enabled a dynamic that projects the transformation of teachers' modes of action through an essential regularity, serving as the guiding axis for the model's actions; it was validated for relevance, coherence, feasibility, applicability, and operational flexibility.

**Conclusions:** a training management model for health sciences teachers in scientific-methodological work was developed, whose cyclical, progressive, and ascending relationships and movements integrate into the teaching mode of action: the development of potential, identification of teacher and educational teaching process problems, appropriation of scientific-methodological knowledge, and strategic empowerment and planning. It was evaluated satisfactorily by the experts.

**MeSH:** faculty; professional development; professional competence; education, medical.

---

## RESUMEN

**Fundamento:** en las ciencias de la salud existe insuficiente articulación de la labor investigativa de los docentes relacionado con la calidad del proceso docente educativo por limitaciones en el trabajo científico-metodológico y en los procedimientos para la gestión formativa en el trabajo metodológico.

**Objetivo:** diseñar un modelo de gestión formativa dirigido a los docentes de ciencias de la salud para el trabajo científico-metodológico.

**Métodos:** se realizó una investigación cualitativa en la Universidad de Ciencias Médicas de Santiago de Cuba en 2023-2024. Se utilizaron métodos teóricos: holístico-dialéctico, hermenéutico-dialéctico e inducción-deducción; y empírico: revisión documental, los que permitieron fundamentar la investigación y diseñar la propuesta. La validación se realizó a

través de 12 expertos, profesores universitarios de ciencias de la salud, con alta calificación científica.

**Resultados:** el modelo se estructuró en dos dimensiones y seis configuraciones cuyas relaciones dialécticas hicieron posible una dinámica que proyecta la transformación de los modos de actuación del docente a través de una regularidad esencial, como eje conductor de las acciones del modelo; fue validado por la pertinencia, coherencia, factibilidad, aplicabilidad y flexibilidad operativa.

**Conclusiones:** se elaboró el modelo de gestión formativa de los docentes de ciencias de la salud en el trabajo científico-metodológico cuyas relaciones y movimientos cíclicos, progresivos y ascendentes integran en el modo de actuación docente, el desarrollo de potencialidades, identificación del problema del profesor y del proceso docente educativo, la apropiación de conocimientos científico-metodológicos, el empoderamiento y planificación estratégicas. Fue valorado satisfactoriamente por los expertos.

**DeCS:** docentes; superación profesional; competencia profesional; educación médica.

---

Received: 06/02/2025

Approved: 12/26/2025

## INTRODUCTION

The systematic study of the results of the educational teaching process is vital for achieving quality education, and educational research is a pillar to be considered in health sciences universities. This type of research is conducted at three levels: in educational systems, the educational institution, and the classroom. Among these, research conducted in the classroom contributes to the field of didactics and fosters educational transformations.<sup>(1)</sup>

Educational research, including research in health sciences education, is carried out directly by teachers themselves with the aim of improving their work. It offers the possibility of introducing results to solve problems identified in training practice.<sup>(2)</sup>

Antúnez<sup>(3)</sup> acknowledges that multiple training programs in pedagogy and research have been developed for health sciences teachers, but there are still shortcomings in pedagogical and scientific-research preparation. Although methodological work is developed with a systemic approach, according to Barrios *et al.*<sup>(4)</sup> teaching-methodological work is prioritized over scientific-methodological work, even though the latter promotes quality in the training process.

The complexity of developing scientific-methodological work in health sciences by teachers in the clinical area is recognized due to the responsibilities they assume: in patient care (health-disease process), undergraduate and graduate education, and professional and professorial development. However, the shortcomings in articulating research work within the educational teaching process also extend to general and basic training.

Scientific-methodological work is characterized as a logical tool for knowledge,<sup>(5)</sup> however, theoretical-methodological shortcomings have been identified in its development; generally, the problems identified in training practice do not correspond with the research conducted. In this regard, at the University of Medical Sciences of Santiago de Cuba, insufficiencies were evident due to a lack of pathways, procedures, and instruments for its implementation, limited use of scientific-methodological work forms in the corresponding plans at different levels of organization of the educational teaching process, and scarce scientific results in response to identified problems.

For this reason, the authors developed research with the objective of designing a training management model aimed at health sciences teachers for scientific-methodological work.

## METHODS

A qualitative investigation was conducted at the University of Medical Sciences of Santiago de Cuba during the 2023-2024 academic year, based on the configurational-holistic scientific conception of Fuentes *et al.*<sup>(6)</sup>The research logic adhered to postulates, precepts, and theoretical references from pedagogical, philosophical, psychological, and sociological sciences, as well as from health science itself, which constituted the internal structure of the model and conditioned its scientific solidity.

To accomplish the investigation, theoretical methods were employed:

- Holistic-dialectical: in the development of the training management model, to determine its significant relationships.
- Hermeneutic-dialectical: during the research process, for the comprehension, explanation, and interpretation of scientific-methodological work as the object of investigation and training management as the field of action; this allowed for dynamizing the scientific logic to be developed.
- Induction-deduction: in determining generalizations, which started from the singularity of the current conditions of the scientific-methodological management training process among health sciences teachers.

Empirical:

Documentary and scientific literature review and analysis: on scientific-methodological work, professorial modes of action, training management and practice, as theoretical references that allowed for the foundation and design of the model's configurations, as well as the review of the legal framework (Resolution 47/2022).<sup>(7)</sup>

Model validation was conducted through expert judgment, which allowed for the evaluation of the model's structure regarding: relevance, feasibility, coherence, and impact, and the Delphi method was used as a consensus method. Twelve experts were selected, all university professors; 11 with scientific degrees: six in pedagogical sciences, two in medical education, two in educational sciences, and one in nursing sciences, with over 20 years of

teaching experience; among them, 11 were full professors and one was an assistant professor.

For its development, three phases were considered: preparatory, consultation, and consensus. Regarding the consultation, 10 indicators were established for relevance, coherence, feasibility, and impact.

## RESULTS AND DISCUSSION

The holistic-configurational scientific conception of Fuentes et al.<sup>(6)</sup> serving as the theoretical and methodological foundation for the model design, recognizes scientific-methodological work as a conscious process of constructing meanings and senses, of a complex, dialectical, and holistic nature.

The analysis of the conducted scientific literature regarding the identified categorical system allowed for the consideration of elements that enriched the internal structure of the model from pedagogical, sociological, psychological, and health sciences.

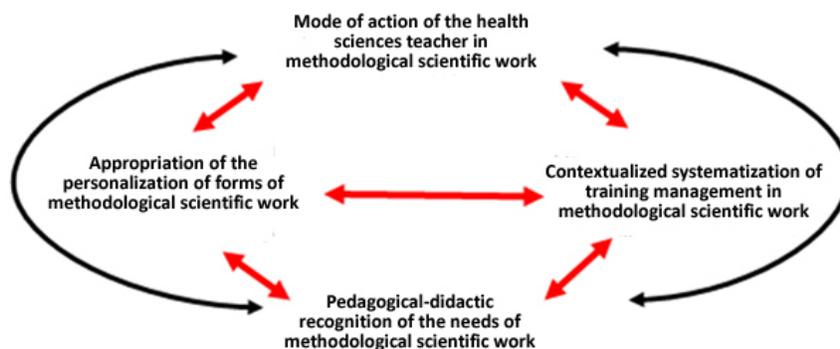
The holistic-dialectical method, grounded in the holistic-configurational conception, enabled the structuring of relationships that characterize the dynamics of scientific-methodological work and training management; the following were established as configurations:

- Didactic-pedagogical recognition of the needs of scientific-methodological work
- Appropriation of the personalization of forms of scientific-methodological work
- Contextual systematization of training management in scientific-methodological work
- Modes of action of the teacher in scientific-methodological work in health sciences
- Empowerment in scientific-methodological work
- Praxiological concretization for scientific-methodological work

Model dimensions:

- Dimension of cultural development of the teacher for scientific-methodological work in health sciences
- Dimension of strategic operationalization in scientific-methodological work.

The first dimension of the model, represented in Figure 1, is conceived as a dialectical process that is enriched by the creative and transformative activity of the individual, broadening the scientific-methodological culture inherent to the training practice, for the appropriation of existing forms of scientific-methodological work, the recognition of didactic, pedagogical, and research difficulties and potentials, as well as the need to utilize scientific-methodological work for the teacher's role as a transforming agent of the quality of the educational teaching process.



**Fig.1.** Dimension: "Cultural development in the scientific-methodological work of health sciences teachers"

Source: own elaboration

This dimension begins with the configuration "Didactic-pedagogical recognition of the needs of scientific-methodological work", which enables the individual awareness of the teacher as both a researcher and an object of research, through self-determination and self-

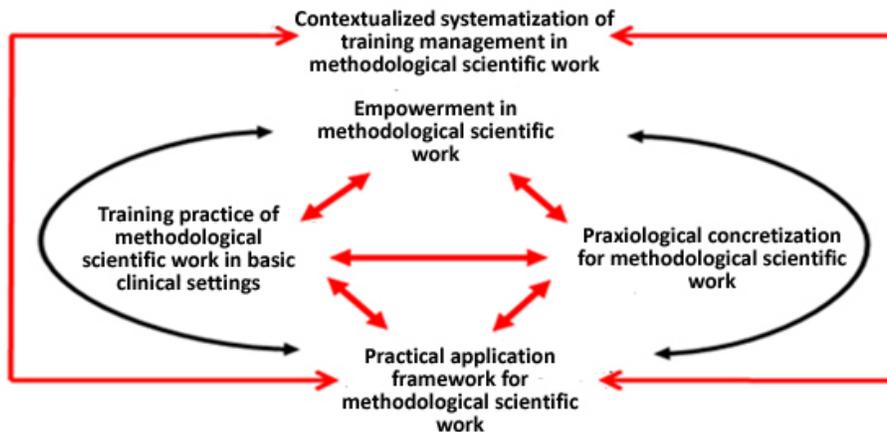
management of scientific, methodological, pedagogical, didactic, and investigative knowledge. The teacher identifies.

In dialectical opposition to this is its counterpart, the configuration "Appropriation of the personalization of forms of scientific-methodological work". This second configuration expresses the teacher's assignment of a set of actions for executing forms of scientific-methodological work, both individual and collective, from conception to development pathways and specific procedures. It has a systemic approach through methodological adaptations according to the level of application, direction, expertise, responsibility, and professionalism, based on recognizing the teacher's didactic-pedagogical needs.

The dialectical relationship of these configurations is, from the dialectical point of view, mediated by another synthesis configuration, "Contextualized systematization in training management in scientific-methodological work". This configuration serves as a theoretical-methodological reference for contextualized ordering for the development of forms of scientific-methodological work, being transcendent and enduring. It constitutes instrumental and procedural know-how for self-managing the scientific-methodological formation of the teacher and the methodological collective. It offers pathways to deepen and discover the essence, to act with self-determination and praxiological innovation in the educational teaching process for which one is responsible.

The existing dialectic of interdependence and interconnection between these configurations is projected and permeated by the synthesis of "Contextualized systematization in the training management of scientific-methodological work," giving rise to a higher-order configuration: "The mode of action of the health sciences teacher in scientific-methodological work". This constitutes an essential configuration, where the transformation of the health sciences teacher is expressed through the incorporation of scientific-methodological work into their performance via self-management, acquired scientific-methodological culture, and strategic operationalization. As a configuration, it achieves the essential objective of this totalizing process, which is to consolidate the adopted behavior manifested in training management within scientific-methodological work in training practice by identifying their human, professional, pedagogical, and didactic qualities for research in education.

However, the actions within this dimension are not sufficient to achieve a sustained transformation of the teacher's modes of action in scientific-methodological work. Therefore, a second dimension is established: "Strategic operationalization in the scientific-methodological work of health sciences teachers". This dimension comprises the set of individual and collective actions projected towards identifying and solving problems within the educational teaching process. The development of its configurations stems from the teacher's training, didactic, pedagogical, research, and scientific-methodological needs. Resolving these needs enables the teacher's self-determination to act and the formulation, either independently or collaboratively, of actions inherent to scientific-methodological work, as shown in Figure 2.



**Fig.2.** Dimension: "Strategic operationalization in the scientific-methodological work of health sciences teachers"

Source: own elaboration

The internal relationships of the configurations within this dimension synthesize practical theorization for the training management of scientific-methodological work and consider key aspects for implementation. From a holistic and complex perspective, these configurations express both social objectivity and teacher subjectivity. This dimension achieves the essential objective of this totalizing process.

From the "Contextualized systematization of training management in scientific-methodological work," another dialectical pair emerges: the configuration "Empowerment in scientific-methodological work." This connotes the authenticity, individual and social responsibility of the teacher, who must take ownership of what they know, desire to know, think, and feel regarding the results of their actions as a teacher—a necessary quality in training management. This allows for the development of self-determination to act in accordance with individual and collective experience, intuition, and creativity, contributing to student satisfaction, transformation of professorial modes of action, and improvement in the quality of the educational teaching process.

The above is complemented by another configuration: "Praxiological concretization for scientific-methodological work." This establishes a set of decisions and actions that lead to the formulation and implementation of plans designed to solve, through scientific-methodological work, problems identified in training practice—at the individual, institutional, departmental, or methodological collective level.

This configuration, through its internal relationships between the teacher's knowledge about scientific-methodological work, the results of teaching-methodological work, and the design of intentional actions from a reflective stance, enables social interaction with students and the educational community. This interaction ranges from the synthesis of the context to the reaction of reflection on new actions put into practice and systematic feedback.

From a praxiological perspective,<sup>(8)</sup> actions for developing scientific-methodological work should generate critical thinking in the teacher. The teacher appropriates strategies that help develop criticality through a deep understanding of the subject they teach, and even beyond the specific science to which it belongs. These are actions that allow for understanding and evaluating the situation in the educational classroom context for which they are responsible, and formulating opinions based on facts and scientific evidence.

Both configurations complement and enrich each other to the extent that the teacher becomes empowered through the self-training accomplished in scientific-methodological work. Thus, they become capable of self-determining and providing solutions to the results

identified in their teaching-methodological work. Actions are fostered based on scientific foundations and strategies that ensure the effectiveness of integrating these relationships, which are, from a dialectical point of view, mediated by the "Contextualized systematization of training management in scientific-methodological work".

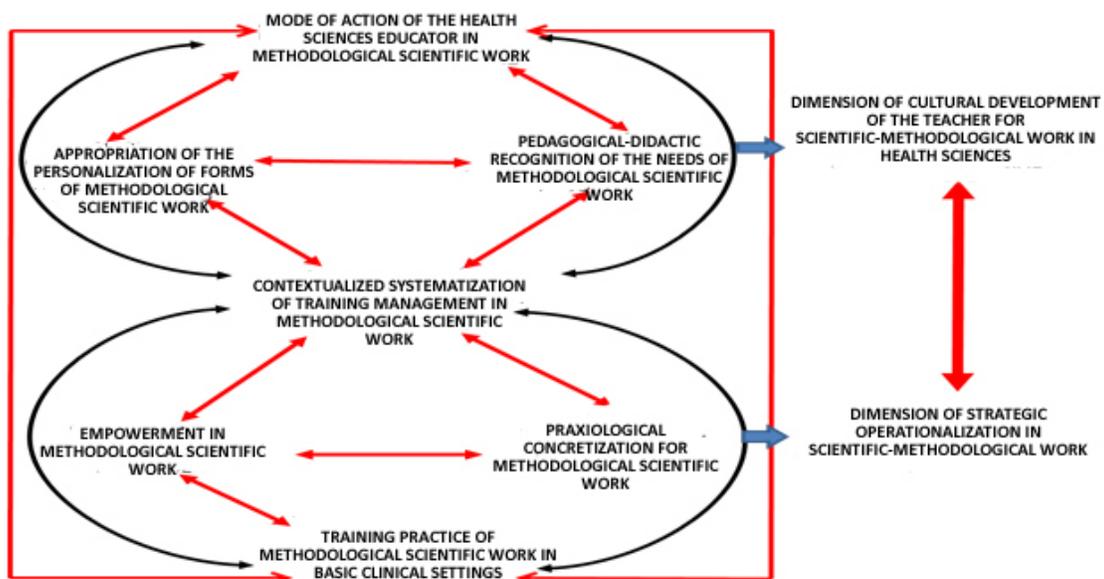
The dialectical relationships between "Empowerment in scientific-methodological work" and "Praxiological concretization for scientific-methodological work" take place in the synthesis of the "Training practice of scientific-methodological work in basic-clinical scenarios". Simultaneously, the qualities achieved by the teacher in training management enhance the educational teaching process.

This configuration, "Training practice of scientific-methodological work in basic-clinical scenarios", is the process where the materialization of the teacher's reflective and intentional action for scientific-methodological work occurs. Its development fosters the linkage between theory and practice and promotes research in education to solve identified educational problems, introduce scientific results, and achieve educational impact.

It serves as a source for developing educational research due to the richness contributed by the forms of work-based education in health sciences teaching and the potential introduction of new educational products developed by the teacher using educational technologies or new trends in higher education. Consequently, it contributes to better academic outcomes and energizes scientific production through research projects generated by them individually or in collaboration with others.

The "Systematization of training management in scientific-methodological work" among teachers in these clinical care settings fosters transformation in their professorial modes of action and enriches their performance. This configuration allows for the appropriation of personalized forms of scientific-methodological work, enabling them to recognize their didactic needs, their potential, and their self-determination to transform the educational teaching process in accordance with the praxiological concretization of scientific-methodological work.

The dialectical relationships between "Empowerment in scientific-methodological work," "Praxiological concretization for scientific-methodological work," and the "Training practice of scientific-methodological work in basic-clinical scenarios" are projected and permeated by the "Contextualized systematization of training management in scientific-methodological work". This sustains the higher-order synthesis of the "Modes of action of health sciences teachers in scientific-methodological work," as illustrated in Figure 3.



**Fig. 3.** Training management model for health sciences teachers in scientific-methodological work

Source: Own elaboration.

As a result of the dialectical relationships between the configurations of the dimensions "Strategic operationalization in scientific-methodological work" and "Cultural development in scientific-methodological work," new professorial qualities emerged in the mode of action of health sciences teachers. These are expressed in the teacher's energetic, empathetic, and determined stance for the intentional development of scientific-methodological work with a praxiological approach, with the capacity to promote innovation and creativity in transforming the educational teaching process they lead.

In this way, the teacher is supported through cyclical, progressive, and ascending moments in self-development and transformation. They transition from developing their potential and identifying problems, through appropriating scientific-methodological knowledge, to achieving empowerment and strategic planning. Therefore, the epistemological foundation of the model is established by considering the "Contextualized systematization of training management in scientific-methodological work" as the essential regularity that, as the guiding axis, structures the actions of the proposed training management model.

Based on this logic, the following characteristics of the model are determined:

- Holistic nature: It fosters a continuous process of events where categories are configured as a whole within the scientific-methodological logic, interconnected as a system.
- Dialectical nature: Its categories are sustained through contradictory relationships that, through analysis and praxis, allow for the transformation of the phenomenon and the transformation of the teacher's mode of action in scientific-methodological work.
- Flexible nature: It can adapt according to need for any level of organization and direction of scientific-methodological work, from individual to collective, in both basic and clinical areas.
- Innovative nature: It integrates research in education through the participatory classroom action research method.
- Professionalizing nature: It incorporates new knowledge for the personal growth of the teacher as a pedagogical, scientific, and research professional, stemming from training management.

Following this analysis, the training management of health sciences teachers in scientific-methodological work is defined as a directed process, conditioned by the need of the health sciences teacher to enhance their culture in scientific-methodological work through self-determination, self-preparation, self-management, motivation, and collaborative work. This is achieved via the contextualized systematization of training management in scientific-

methodological work, which projects towards the ascending development of the transformation of the teacher's modes of action.

Modeling represents a theoretical contribution in educational research, as it represents the object under study<sup>(9)</sup>. In the conducted review, the modeling of methodological work in health sciences has been directed towards teaching-methodological work, presented in models of scientific-methodological work particularized to the introduction of results and to research training focused on biomedical research.

The authors concur with Pérez *et al.*<sup>(10)</sup> that health sciences teachers adhere to programs developed by national commissions; however, if the teacher is capable of incorporating scientific-methodological work into their practice, educational innovation and transformation could be demonstrated, favoring the quality of the teaching they provide. On the other hand, authors like González *et al.*<sup>(11)</sup> demonstrate the existing correlation between teacher management in education and its impact on teacher performance.

The proposed model highlights a prioritized line of work in teacher training: educational research. This is a process that teachers responsible for methodological guidance at all levels of organization and direction of the educational teaching process must manage efficiently, involving all members of the faculty.<sup>(12)</sup>

A relevant aspect of the model is its applicability by teachers at different levels of organization and direction of methodological work in health sciences, especially within subject collectives of the main integrative discipline of any career or knowledge area. For these collectives, practical strategies related to considering the clinical teacher are taken as references. Their training develops alongside patient care, taking into account what Núñez<sup>(13)</sup> posits regarding the teacher's capacity, their strengths and weaknesses, and their mastery of their science and of educational research.

The perspective presented by these authors regarding the individual-society relationship in the educational context as a social process is adopted. They emphasize that achieving quality, relevant, and timely education must be aligned with the new paradigms of the

knowledge society, and must take into account the preferences and interests of both those who receive education and those who provide it.<sup>(14)</sup>

The model incorporates the teacher's capacity to adapt to the environment, to new educational paradigms, and to the type of students currently in classrooms—a reflection of contemporary society—as well as to the population's need for quality medical care, and to the teacher's own needs for personal growth and fulfilling expectations.

Regarding the teacher's role in the systematization of training, Fuentes' criteria<sup>(15)</sup> are taken into consideration. The teacher becomes the protagonist of management and development; that is, the manager of transformation, acknowledging the human condition of the health sciences teacher, who carries a significant social commitment in their actions. The teacher's training management in this process demands analysis and recognition from an individual perspective in relation to the transformations, cognitions, evaluations, and actions that should manifest in training practice.

The training management qualities represented in the model are directed towards transforming the teacher's modes of action in scientific-methodological work, and incorporate teacher autonomy in the classroom into the model. The teacher's motivation for educational transformation -a term widely used in the teaching-learning process-<sup>(16)</sup> is important, as it contributes to developing capacities more effectively and generates critical thinking for strategic actions.

The abstraction process carried out by the authors, according to expert judgment, demonstrates the relevance, coherence, feasibility, and applicability of the designed model due to its operational flexibility, and foresees an impact on the transformation of the mode of action.

#### Scientific contribution

The training management model reveals the integrative logic of health sciences teachers' training management in scientific-methodological work based on the dialectical relationships between configurations, new constructs, reconceptualizations, tools, and procedures. These

contribute to transforming modes of action and enable enhancing the quality of the educational teaching process. It serves as a theoretical foundation for designing training management strategies in scientific-methodological work, and is suitable for use in basic-clinical training settings.

## CONCLUSIONS

A training management model for health sciences teachers in scientific-methodological work was developed. It's cyclical, progressive, and ascending relationships and movements integrate, into the teacher's mode of action, the development of potential, identification of teacher and educational teaching process problems, appropriation of scientific-methodological knowledge, and strategic empowerment and planning.

## BIBLIOGRAPHIC REFERENCES

1. Flores AH. Introduction to Educational Research in the Classroom. [Internet]. Mexico: National Autonomous University of Mexico. College of Sciences and Humanities; 2020. Available at: [https://cfc.cch.unam.mx/assets/docs/libros\\_antologias/Introduccion\\_a\\_la\\_Investigacion\\_en\\_el\\_Aula.pdf](https://cfc.cch.unam.mx/assets/docs/libros_antologias/Introduccion_a_la_Investigacion_en_el_Aula.pdf)
2. Catalán JP. Action Research as a Strategy for Reviewing Pedagogical Practice in Initial Teacher Training for Basic Education. Ibero-American Journal of Educational Studies [Internet]. 2020 [cited 14/05/2022]; 15(4):2768-2776. Available at: <https://www.redalyc.org/journal/6198/619867501018/html/>
3. Antunes J. Trends in Pedagogical and Scientific-Research Professional Training for Nurses and Health Technologists. MEDISAN [Internet]. 2023 [cited 10/03/2024]; 27(5):e4382. Available at: <https://medisan.sld.cu/index.php/san/article/view/4382>
4. Barrios Y, Ledo CT, Couso C. Scientific Methodological Work in Higher Medical Education. M y S [Internet]. 2024 [cited 02/04/2025]; 21(3):921–929. Available at: <https://maestroysociedad.uo.edu.cu/index.php/MyS/article/view/6459>

5. Gamboa JG. Scientific-Methodological Work: A Logical Tool for Knowledge. *Electronic Scientific-Pedagogical Journal* [Internet]. 2018 [cited 12/03/2022]; (3): 1605–5888. Available at: <https://www.cienciaspedagogicas.rimed.cu/index.php/ICCP/article/view/98>
6. Fuentes HC, Montoya RJ, Fuentes SL. *Formation in Higher Education from the Holistic, Complex, and Dialectical Perspective of Scientific Knowledge Construction*. Santiago de Cuba: Universidad de Oriente; 2011. ISBN 978-959-207-444-6.
7. Cuba. Ministry of Higher Education. *Regulations for the Teaching Process and Work Direction for University Careers*. Resolution 47/2022. Havana: MES; 2022.
8. Bernate Jayson A, Puerto Garavito SC. *Praxiology as a Pedagogical Phenomenon in Citizenship Competencies in Higher Education*. *Sophia* [Internet]. 2024 [cited 10/10/2025]; 20(1): e1250. Available at: [http://www.scielo.org.co/scielo.php?script=sci\\_arttext&pid=S1794-89322024000100010](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S1794-89322024000100010)
9. Deroncele A, Medina P, Gross R. *Management of Formative Potential in the Person: Epistemic Reflection and Methodological Guidelines*. *University and Society* [Internet]. 2020 [cited 12/03/2022]; 12(1): 97-104. Available at: <https://www.researchgate.net/publication/340570200>
10. Pérez C, Vaccezza G, Toirkens J, Salgado H, Bastias N, Shiling MJ, Espinoza M, Matus O. *What Do Health Sciences Academics Do to Define the Purposes of Their Undergraduate Teaching?* *FEM* [Internet]. 2020 [cited 01/02/2022]; 23(4): 173-178. Available at: [https://scielo.isciii.es/scielo.php?script=sci\\_arttext&pid=S2014-98322020000400003](https://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S2014-98322020000400003)
11. Gonzales ME, Sierralta S, Lora MG. *Educational Management for Teacher Performance at Educational Institution 16228 San Luis*. *Mendive* [Internet]. 2024 [cited 12/02/2025]; 22(1): e3528. Available at: <https://mendive.upr.edu.cu/index.php/MendiveUPR/article/view/3528>
12. Guerra L, Espindola A. *The University Professor Training Process in the Cuban Context*. *EduSol* [Internet]. 2022 [cited 11/02/2025]; 22(80): 165-175. Available at: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S1729-80912022000300165](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1729-80912022000300165)
13. Núñez JM. *Medical Education: Quo Vadis?* *RIECS* [Internet]. 2023 [cited 12/01/2025]; 8(1): [approx. 4 p.]. Available at: <https://www.riecs.es/index.php/riecs/article/view/371/438>
14. Fajardo E, Cervantes LC. *Theories on the Sociology of Education and Their Impact on Educational Systems and Policies in Latin America*. *Rev Boletín Redipe* [Internet]. 2020

[cited 12/03/2022];9(5):55-76. Available at:

<https://revista.redipe.org/index.php/1/article/view/975/888>

15. Fuentes H. Pedagogy and Didactics of Higher Education. In the Conception of the Human Cultural University. A Proposal from the Bolívar State University. [Internet]. Guaranda, Ecuador: Universidad Estatal De Bolívar; 2009. Available at:

<https://isbn.cloud/9789978364017/pedagogia-y-didactica-de-la-educacion-superior-en-la-concepcion-de-la-universidad-humana-cultura/>

16. Franco JA. Teacher Motivation to Achieve Educational Quality in Higher Education Institutions. Virtual Journal of the Catholic University of the North [Internet]. 2021 [cited 04/03/2023]; (64): 151-179. Available at:

<https://www.redalyc.org/journal/1942/194267200007/html/>

### **Declaration of interests**

The authors declare no conflict of interest.

### **Author contributions**

Conceptualization: Yusimy Barrios López, Dr. C. Celia Teresa Ledo Royo

Data Curation: Yusimy Barrios López

Formal Analysis: Yusimy Barrios López

Investigation: Yusimy Barrios López, Dr. C. Celia Teresa Ledo Royo

Methodology: Yusimy Barrios López, Dr. C. Celia Teresa Ledo Royo

Project Administration: Yusimy Barrios López

Visualization: Yusimy Barrios López

Writing – Original Draft: Yusimy Barrios López

Writing – Review & Editing: Yusimy Barrios López

This article is published under a [Creative Commons](https://creativecommons.org/licenses/by-nc/4.0/) license.