

# MENDIVE

REVISTA DE EDUCACIÓN

Original article

## Research training in the doctorate of Educational Sciences: promotion of scientific culture

La formación investigativa en el  
doctorado de Ciencias de la  
Educación: fomento de la  
cultura científica

Formação em investigação no  
doutoramento em Ciências da  
Educação: promoção da cultura  
científica

Bárbara Maricely Fierro Chong <sup>1</sup>



<https://orcid.org/0000-0002-7177-1860>

Inés Milagros Salcedo Estrada <sup>1</sup>



<https://orcid.org/0000-0003-3188-6687>

Ivis Nancy Piedra Navarro <sup>1</sup>



<https://orcid.org/0000-0001-7683-9919>

Haydeé Acosta Morales <sup>1</sup>



<https://orcid.org/0000-0001-9869-8141>

Caridad Alonso Camaraza <sup>1</sup>



<https://orcid.org/0009-0005-6004-3445>

<sup>1</sup> University of Matanzas "Camilo  
Cienfuegos". Cuba.



[barbara.fierro@umcc.cu](mailto:barbara.fierro@umcc.cu) ;  
[ines.salcedo@umcc.cu](mailto:ines.salcedo@umcc.cu) ;  
[hamdos2014@gmail.com](mailto:hamdos2014@gmail.com) ;  
[caryalonso25@gmail.com](mailto:caryalonso25@gmail.com)

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### ABSTRACT

The doctoral education process in Education Sciences, in its continuous improvement, seeks to enhance the development of skills in students at this level, in order to provide them with critical, innovative, and creative knowledge, skills, attitudes, and qualities to address solutions in educational activities, based on the foundations of education sciences. In this direction, the doctoral program at the University of Matanzas enhances the dynamic interrelationship of its components to facilitate individual progress for doctoral students in a unit and articulation of the scenarios and pathways that educational practice places as essential. The objective of this article focused on the result of a cut from the theoretical-methodological-experiential reflection in doctoral training to achieve continuous improvement in educational activity. The application of scientific methods and different techniques and procedures enables the monitoring and evaluation of results in the period from 2020-2023, in the selected sample of those enrolled in 2019. The results reveal outstanding aspects in the construction of new knowledge for doctoral training in Education Sciences. It is concluded that new challenges in doctoral training find strengths in the articulation of mandatory and optional activities of the investigative component.

**Keywords:** debates; doctoral students; academic networks; thesis workshops; tutors.

### RESUMEN

El proceso de la formación doctoral en Ciencias de la Educación, en su perfeccionamiento continuo busca la mejora del desarrollo de capacidades en los estudiantes de este nivel, a favor de posicionarlos de conocimientos,

habilidades, actitudes y cualidades críticas, innovadoras y creadoras para enfrentar soluciones de la actividad educativa, sustentado en los fundamentos de las ciencias de la educación. En esta dirección, el programa de doctorado en la Universidad de Matanzas potencia la interrelación dinámica de sus componentes para facilitar los avances individuales de los doctorandos, en una unidad y articulación de los escenarios y vías que la práctica educativa coloca como esenciales. El objetivo de este artículo se enfocó en el resultado de un corte desde la reflexión teórico-metodológica-vivencial en la formación doctoral para el logro de la mejora continua en la actividad educacional. La aplicación de los métodos científicos, diferentes técnicas y procedimientos posibilita el seguimiento y evaluación de los resultados en el periodo de 2020-2023, en la muestra seleccionada de los ingresados en 2019. Los resultados revelan los aspectos sobresalientes en la construcción de nuevos saberes para la formación doctoral en Ciencias de la Educación. Se concluye que nuevos desafíos en la formación doctoral encuentran fortalezas en la articulación de las actividades obligatorias y opcionales de la componente investigativa.

**Palabras clave:** debates; doctorandos; redes académicas; talleres de tesis; tutores.

## RESUMO

O processo de formação doutoral em Ciências da Educação, na sua melhoria contínua, procura melhorar o desenvolvimento de capacidades nos estudantes deste nível, em favor de posicioná-los com conhecimentos, competências, atitudes e qualidades críticas, inovadoras e criativas para enfrentar soluções. atividade educativa, baseada nos fundamentos das ciências da educação. Neste sentido, o programa de doutoramento da Universidade de Matanzas potencia a inter-relação dinâmica dos seus componentes para facilitar o progresso individual dos doctorandos,

numa unidade e articulação dos cenários e caminhos que a prática educativa considera essenciais. O objetivo deste artigo centrou-se no resultado de um recorte da reflexão teórico-metodológica-experiencial na formação doutoral para alcançar a melhoria contínua na atividade educativa. A aplicação de métodos científicos, diferentes técnicas e procedimentos permite acompanhar e avaliar os resultados no período 2020-2023, na amostra selecionada dos admitidos em 2019. Os resultados revelam os aspectos marcantes na construção de novos conhecimentos para o doutorado formação em Ciências da Educação. Conclui-se que os novos desafios na formação doutoral encontram forças na articulação das atividades obrigatórias e optativas da componente de investigação.

**Palavras-chave:** debates; estudantes de doutorado; redes acadêmicas; oficinas de tese; tutores.

## INTRODUCTION

The process of doctoral training in Educational Sciences in its continuous improvement seeks to improve results in the development of capabilities in students at this level. It is shared with Martínez *et al.* (2019) that:

Doctorates presuppose the highest degree of academic training and constitute the core of the pool of human resources in science and technology. Participation in doctoral processes by human resources enables them to develop complex research projects and to fulfill an intellectual leadership function that allows an appreciable accumulation of knowledge to radiate in concrete situations (p. 871).

Doctoral training in Educational Sciences at the University of Matanzas owes precedents in this process, established in the best traditions, in the scientific policy

documents and the Ministry of Higher Education (2019), as one of the organizational forms main objectives of professional improvement, as it is consistent with the idea that this process constitutes a scenario of response to educational problems in a holistic, integrated and interdisciplinary manner, based on the unity of postgraduate studies and research with an innovative nature. The doctoral program in Educational Sciences, at the University of Matanzas, trains doctors to respond to the needs, demands and problems in the educational settings of the territory of Matanzas and other regions of Cuba and the world, in correspondence with the conditions of resilience imposed by the COVID-19 pandemic.

Authors such as Fernández (2018), Martínez *et al.* (2019), Urbay *et al.* (2022), Rubio (2023), Ganga *et al.* (2023), at an international and national level, reveal a set of theoretical foundations and good practices that fertilize the view of the doctoral committee of the program at the University of Matanzas in the search for continuous improvement, in favor of positioning them with knowledge, skills, critical, innovative and creative attitudes and qualities to face solutions to educational activity, based on the foundations of educational sciences.

In this direction, the ideas of Prieto *et al.* *are references.* (2023) around the role of the tutor in the area of medical training, which in this study are enriched by the collective experience of tutors and doctoral students. It is shared with Rubio (2023) that the doctoral training process must be distinguished by the "scientific spirit nourished by the sciences, reflective, critical, creative, objective thinking; where logic, rationality, its feeling, commitment and responsibility" (p. 57), which agrees with the support provided by Hernández-Sampieri, Mendoza-Torres (2018), Leyva and Guerra, (2020); Valiente, *et al.*, (2020).

According to González, J. (2021), in doctoral training the knowledge acquired inside and outside the program is relevant, while metacognitive reflection leads to interaction with them and making them more significant and meaningful, which that gives particular value to metacognition as a process that facilitated the doctoral student to advance in the steps of knowledge and, with it, the growth in the theoretical contributions and practical meanings that he pursued with his research.

With a tradition of twenty-five years of work in doctoral training in educational sciences, the University of Matanzas has trained more than 150 doctors for the territory of Matanzas, other regions of Cuba and several countries, including: Angola, Brazil, Chile, Colombia and Ecuador; whose most favorable impact was identified as strengths in the evaluations of the Accreditation Board in 2017 and 2018 to the two existing programs: Pedagogical Sciences (Excellence) and Educational Sciences (Certificate) gave way to a program in 2018, more contextualized to the contemporary demands for training through a credit system, focused on research, within projects and research groups, work in academic and research networks and flexible in recognition, through validation or certification of credits in the domain of content theoretical-methodological.

The three lines of research of the program (line 1: Comprehensive training of children, adolescents, young people and adults in conditions of social and educational inclusion; line 2: Training of professionals in Higher Education; line 3: Social and humanistic studies in education) cover a range of references in which a tradition of the faculty and its graduates is based; namely: theses defended on the topics of the area of knowledge, articles published in magazines, book chapters and texts in Cuba and other regions, the obtaining of prizes awarded by different instances, the impacts on the socio-educational contexts in which the graduates). In this regard, it

was significant to take into account the environments as learning spaces (García-Barbero, 2019) and the conditions regarding innovation and resilience, recognized by Castro-Castillo (2023) and Lamus de Rodríguez *et al.* (2023)

In the systematic study of the training process, the focus is on determining the peculiarities of this training, the search for the most significant points that make it possible to enhance the strengths and mitigate the weaknesses that are identified. These budgets served as the starting point for the scientific work of the program in its three lines of research, to deploy the theoretical-methodological approach in response to existing problems.

The identification of focal aspects during the implementation of the program in the period 2020-2023, in continuous improvement, reveals the need to respond to the challenges of educational practice that are faced from the research-science-innovation relationship.

The purpose of this work is to offer the result of a cut from the theoretical-methodological-experiential reflection in doctoral training to achieve continuous improvement in educational activity.

## MATERIALS AND METHODS

The scientific-methodological work carried out in the Educational Sciences Program was supported by the application of theoretical and empirical methods, with a qualitative -quantitative, descriptive-explanatory approach; It articulated: observation, individual and collective interviews with doctoral students and tutors, analysis of documentary sources, review of the products of the doctoral students' research activity (partial and final results of the theses presented to the workshops). thesis), articles published as part of the socialization of the results, evaluation reports, the dialogue of the

doctoral committee with the doctoral students and other actors and the authors' own experience as participants in the training process.

The work consisted of evaluating the results of the "research training" component, during the period 2020-2023, of a sample of doctoral students taken from those who entered in 2019, the year with the highest income in the history of the last 15 years. To this end, the work guidelines proposed by the doctoral committee were followed, based on the new demands for training and the realities imposed by distancing and physical isolation due to COVID-19, the documents issued for the presentation of the partial and final results of the research progress and the aspects contemplated in the credit record of the doctoral students.

The intentional sample of 20 doctoral students was taken, representing 47.61% of the admission for 2019, of which 11 were from the University of Matanzas' own faculty, eight from organizations and institutions in the province, and one from abroad.

The study of the reports of thesis reviews in processes, of the observations, reports of the thesis workshops, the notes made in each act of pre-defense and defense, the collective exchange in the program and the dialogue fertilized the approaches to the configured vision of doctoral training on a new path, revealed from the contexts of isolation imposed by COVID-19 and the effects of the post-pandemic, in the face of a new reality.

## RESULTS

In accordance with the problem posed and the research logic followed, the attention was focused on the doctoral students' research acquiring a life of its own, autonomy in the search for new results in the three lines of research, to which the

authors of this work added the innovative vision to apply the contributions of science and its socialization in their contexts.

Therefore, the transformation that occurred in the main actors of the process: doctoral students and tutors, became visible to the extent that progress was made in the acquisition of theoretical and methodological knowledge, in a more solid result of the construction of the thesis and, Therefore, a greater breadth of references, the foundations of Educational Sciences as an organic and joint whole, taking into account the sociocultural conditions of each object of study and the experiences of doctoral students and tutors.

The research training component in the program revealed its backbone character, due to its essence and profile, focused on the deployment of the categories of Educational Sciences and the methodology of educational research, nourished with other related research theories, in accordance with the nature of the object of study.

The thesis workshops were considered the central core of the research process, a demonstration scenario of the theoretical-methodological domain in which the preparation to construct the written memory matured. Therefore, when the content presented by a doctoral student to the workshop was evaluated, it was not only what he wrote, but also how he defended what he built: knowledge, but also values, attitudes, empathy and culture in the broadest sense of the word. And this integration of text and its defense provided the elements to grant an evaluation sustained by accreditation. This perspective shed light on the search for better results and greater effectiveness in the program.

The conscious incorporation in tutors and doctoral students of the idea that the workshops helped to write and defend the thesis was essential in this spiral of knowledge, attitudes, values and creative activity. Each workshop constituted a space

to evaluate the theoretical-methodological mastery and preparation for the defense. Everything that the doctoral student was able to incorporate in various ways to enrich his mastery of Educational Sciences stimulated and encouraged him based on his training needs.

Essential activity in this component was the socialization of the results in articles derived from the thesis, which provided mandatory and optional credits: participation as speakers in scientific events of recognized international, national and territorial prestige, teaching of postgraduate courses and workshops and in international events, advice on student scientific work. These aspects revealed a unique relationship with others. The breadth, diversity, choice and scope of the results implied adequate guidance of the tutor, the role of the research project and the control of the teaching department. That is, the role of the actors of the process in the training scenarios is modeled according to the particularities of each topic, the demand that is made of it and the diverse perspectives of specialists that nourish the result that is built with a theoretical contribution and a significance.

The design of activities for the doctorate to demonstrate their knowledge was expanded in this component with optional contents; Such was the case of scientific debates, teaching of undergraduate and postgraduate activities in a creative way related to their thesis topic, active participation in knowledge, scientific or academic networks that contribute to their progress.

The contents that made up the theoretical-referential framework, as the core of the mandatory contents of the theoretical-methodological component, were acquired through various means (validation, certification or evaluation) and modalities (in-person or remotely). To the extent that the doctoral student possessed the knowledge acquired in a master's degree or in the courses of the university's improvement plans or other institutions,



there was an enrichment of his theory and his praxis; In the results analyzed, this process was expanded by carrying out pre-conference courses, workshops, conferences, whether in person or virtual, which complemented and reinforced, but did not replace, the possibility of participation in the active acquisition of the content.

The teaching of the research methodology that accompanied the theoretical-methodological component was taken up at the different moments of debate of the results. At this stage it was evident:

- Taking advantage of the postgraduate offering of the University of Matanzas and other institutions in the territory, the country and the region, with the use of virtuality, and the courses in Congresses, Workshops, Symposiums to support, from the theoretical-methodological component, research .
- Participation of the scientific leaders of the participating entity (University of Medical Sciences), as well as doctors trained by the program from other institutions in the territory and from other programs, in the thesis and pre-defense workshops .
- Increased participation in various academic and scientific networks, which promoted meetings, courses, workshops and conferences, not only for socialization, but for the edifying use of the knowledge generated.

All of this had a favorable impact on the improvement of scientific-methodological work in continuous improvement, as one of the main organizational forms adopted by professional improvement in Cuba; as well as identifying and projecting institutional research for the systematization of the results of the program's doctoral theses.

Along this path, the systematic observation of the various actions, the individual and

group interviews with doctoral students, the review of the products of the creative activity and the quarterly evaluation process, became metacognitive resources, which were complemented with knowledge and reflection. fruit of the joint work of doctoral students, tutors, managers and scientific leaders.

Based on the references assumed in the program, the investigative component reached the relief of someone who advanced from shadow to light, from the unknown to the new known, through discovery, in which the qualities of the honesty in research work, the distancing of vanity and attachment to objectivity, research, social service and the common good, in the articulation of alliances between research projects, territorial institutions as settings for doctoral training in the unity of theory and practice. This component rested on the knowledge that brought to fruition the scientific culture placed in a primordial place, which is expressed in:

- The results of the presentation and evaluation of the progress in the thesis workshops, in knowledge production spaces within the framework of research teams in each line of research of the doctoral program; Hence, the thesis workshops were devices that fulfilled the purpose of guiding and training in the production of knowledge.
- Academic and scientific networks were established as a platform for collaborative communication in learning for doctoral students and tutors, by favoring the exchange of points of view and ideas and, therefore, the contribution to the professional development of others, to the generation of new knowledge and the edifying use of what is published. The Ibero-American Network of Pedagogy and Education ( Redipe ) brought together a high number of doctoral students from the selected sample; From 55% in

2022, it gradually advanced to 85%, seven doctoral students were identified who belonged to at least one other network, which favored the increase in participation in international events, as well as publication in magazines and book chapters ( 27 book chapters).

- The behavior of the publications of the doctoral students in the sample, directly related to their thesis, revealed that, of the 20 doctoral students in the sample, 15 carried out their pre-defense or defense with two articles, four did so with three articles and one with four articles. , in accordance with the provisions of the ministerial resolutions in force at the time of the corresponding exercises. The publications in the magazines showed (graph 1) indexing levels of maximum 65.95% and, between medium and minimum, 34.04%. In addition, they published 26 chapters in books and eight articles in other magazines.



**Graf . 1-** Behavior of publications in databases

Legend: 1. Scopus , 2. SciELO, 3. Redalyc, 4. DOAJ , 5. Class, 6. Citma Certified

The existing relationships between those who constituted the objectives and the observed events revealed the articulation of the activities of the three components of the program in the line of research. This facilitated progress, through sustained, joint work and creating learning communities, in which the edifying use of knowledge favors progress along the path

of research; hence the relationship between the components is spiral and nested dialectically.

Of the selected sample, five doctoral students completed their exercises in the first 24 months of their training, while seven completed it in the 36 months of their training and eight were pending for the last year.

## DISCUSSION

In the investigated process, the discussion of the results is expressed in three essential routes, which characterized the investigative component in the period studied, marked by COVID-19 at its most complex moment (2020-2021), the findings of its significance, consequences and the testimonies of doctoral students and tutors; The reflections written in comments or oral evaluations offered the thesis students other perspectives that enriched the scientific heritage.

- **Thesis workshops: variations for a recovery of experiences**

With the motto expressed by the Doctoral Committee of "each workshop a new learning", successes and failures were identified in the fulfillment of the indicators developed for the thesis workshops, which cover the entire investigative path and "contribute to exploring the most insufficient areas in this journey", where the thesis student is not only accompanied by his tutor, but by a group of teachers from the line of research, other doctors and the remaining classmates who participate in the exercise.

In reflecting on this essential aspect, an assessment collected in the reports of the workshops was revealed: "Although the program makes explicit the existence of various types of thesis workshops, for the certification of credits, it is not always a time when it is reached with all the

maturity of the written memory in terms of ideas to defend, and the appropriate levels of argumentation that are required for each moment" (Fragment of thesis workshop observation). Contrasted with the comments on the contents of the evaluated written report, it led to highlighting the idea of the thesis workshops as impulses in the discovery of new knowledge and the development of skills and evaluative attitudes.

According to Fernández- Fastuca (2018), the distance between the known world that taking a subject represents and the novelty of the moment of the thesis was "highlighted" (p. 26). It is not just about being an active consumer of knowledge, but the reflective and critical attitude (Ramos and López, 2023) generated interaction with the contents of an area of knowledge and broadens the view of its object of study.

In collecting testimonies, one of the thesis students expressed: "the research methodology is a core of the process, you have to continually return from any workshop to resume the theoretical-methodological design."

From the data collection, testimonies such as: "I attended to all the recommendations of the previous workshop, but I know that I must improve the argumentation of some paragraphs" (Fragment observation of thesis workshop). And "The search for new research methods adapted to the need of my research led me to go back over what I had done, review the path followed" (Fragment of thesis workshop observation). This endorsed the idea of the gradual maturity that was achieved in the thesis and in the attitude of the doctoral students.

The scientific leadership of the line of research was essential to ensure that in the thesis workshops the advances of the research were materialized with the involvement of the subject in its dimensions: cognitive, attitudinal, affective and creative. The way in which the doctors

and other doctors invited for their expertise on the subject got involved was nuanced by the hybrid modality: in-person and non-in-person.

Now, the fact that all doctors master the indicators that govern a workshop, according to the workshop carried out and evaluated, and that they were able to share their ideas, suggestions, recommendations through different means, did not prevent the diversity of nuances in the process of evaluate it. The doctoral student's subsequent dialogue with the points, alerts and reflections derived from reading and in-depth study generated a learning climate that they appreciated and recognized as very satisfactory.

The identification of the characteristics of good doctoral research and where they should direct their gaze, in accordance with the theoretical assumptions of the research methodology, according to Hernández-Sampieri and Mendoza-Torres (2018) at an international level, as well as Leyva and Guerra (2020) at the national level, constituted the cornerstone in the development of critical thinking in students.

The work sessions with the doctoral students were characterized by fruitful dialogue in the rescue of scientific practices in the program. Highly adequate, and very adequate, levels of satisfaction were expressed in 100% of the doctoral students. The number of doctoral students reluctant to assume a favorable attitude towards the critical assessments issued is not significant, although it is a warning for practice, which implied rethinking the classroom practices conceived and executed; inasmuch as, research is a process in which various subjects intervene, and it was assumed in the experience of the program in various training scenarios, namely: the departmental group, the research group and in the line of the doctoral program.

As a process of interaction and interthinking of various acts, the role of



specialists and evaluators of the group of doctors in the thesis workshops is also essential. In general sense, there is a deep scientific rigor and an attachment to the indicators that are identified for each workshop, although it is important to gain empathy, with constructive and non-discriminatory value judgments of the work of your colleagues; which revealed that the work of directing the thesis workshop must be improved, because it is about weaving a result so that each workshop responds to the motto that there is always progress.

Some of the expressions of the collective reflected this thought:

"The tensions that generate contradictions must be soluble in favor of improvement, it is not about discarding what others point out. The theoretical-methodological questions shape this progress in favor of scientific rigor and demand." "It is about returning to the points of the previous workshop to evaluate to what extent it was receptive and there is progress in the progression that marks the investigation." The conscious application of materialist dialectics and attention to the subjectivity of the participants constituted factors that must still be considered in the process.

- **Participation in academic networks and debates: appropriation of knowledge**

Participation in academic and research networks and the gradual increase in the number of affiliated doctoral students, number of networks and participation in spaces for socialization and exchange, showed how professional development was promoted through social interactions (in spaces virtual and in-person), asynchronously to access the resources of others, such as information, experience and knowledge, and social networks and online spaces.

The articulation of various activities in the research component meant that, as a result of the reflection, spaces for scientific

debates were organized, following the idea of the workshop as the predominant organizational form, without ignoring others. Taking advantage of various opportunities at conferences, forums, and workshops in which emerging topics were addressed in which doctoral students found paths to their scientific approaches has been one of the richest experiences of the program.

In this regard, the thesis students stated: "I participated in two scientific debates, but in one of them I did not find anything new, however, the others' questions also helped you clarify possible doubts that you had not thought about." "Sometimes we believe that we have mastered how to write the scientific text, however, it is an apprenticeship, in the debate with four perspectives, there was no time to get bored, what you thought you knew and did well, suddenly it was not like that. The experiences of the others, the good practices of those who are reviewers of magazines".

- **Publications: the visible face of training**

In the aspiration to raise the quality of scientific communication by doctoral students and their tutors in journals positioned in high-impact databases, the doctoral committee played a guiding role in offering avenues for the publication of articles, identification and recommendations. of magazines in accordance with the nature of the topics, collective and individual debate sessions about the demands, the characteristics of the scientific article as a particular textual typology. The transmission of teachers' personal experiences about their training journey or performance as researchers constituted moments that distinguished the progress of the process.

Modeling scientific discourse was an essential part of learning: knowing how to listen, showing respect to others, recognizing the doctors of the group as collaborators, not their assistants,

advancing in the thematic progression of the thesis articulating the entire theoretical-methodological design with the typologies. textual texts appropriate to scientific discourse.

Tensions rose, particularly in the process of reviewing the articles by academic peers (Valiente, P.; Salazar, M.; Domínguez, L.; Coloma, O., 2020), a significant phase of the research that contributes a lot to the quality of what will be defended later, because the critical evaluation of the manuscripts by an external authority, under the concept of "blind pairs" that confirms veracity, relevance and rigor, was one of the best.

The data enabled the improvement of the training strategy, the search for new alternatives and the application of innovation in the face of new demands for the training of high-level professionals.

The following were determined as challenges to meditate on in the training process:

- Query sources must give more priority to magazine articles, based on a critical analysis of their articulation with the classics of the object of study.

- The use of knowledge generated in English languages favors a broadening of the perspectives with which it enriches the documentation taken from the theoretical-referential framework of its object of study.

- The need to sustain and expand consciously and with strategic socio-discursive competence the knowledge that is generated in the main currents of science and what academic networks provide.

The research component in the Educational Sciences program at the University of Matanzas rethinks new challenges in the continuous improvement of working to respond to the demands of educational development, supported by science, technology and innovation, to contribute to

a better introduction and generalization in social practice, delve into the originality of the scientific results offered, diversify the avenues and methods of research in accordance with the nature of the result and the needs of educational practice. The essential activities that revolve around thesis workshops as spaces for theoretical and methodological construction reveal that scientific debates, academic networks, socialization in events and publications enrich the global vision of research, its novelty and originality to reveal its articulation and promote scientific culture.

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The authors declare that they have no conflicts of interest of any kind.

**Authors' contribution:**

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

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