
La sistematización de resultados científicos

Systematization of scientific results

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Resumen: El artículo propone una metodología para la sistematización de resultados científicos en la Maestría en Ciencias de la Educación. Sustentada desde referentes teóricos filosófico, sociológico, psicológico, pedagógicos y legales; considerándolo un proceso dinámico, interactivo, sistémico, reflexivo y participativo, orientado a la construcción de aprendizajes, conocimientos y propuestas transformadoras. En este sentido aprovechar los resultados de las investigaciones educativas constituye una necesidad social para mejorar la calidad en el proceso de preparación de los educadores que transitan por una formación académica y se contribuye al perfeccionamiento de la Educación Superior, de ahí la necesidad de una metodología para tal fin.

Palabras claves: Metodología; Herramienta teórico-metodológica; Superación; Sistematización de resultados científicos.

Abstract: The article proposes a methodology for the systematization of scientific results in the Master of Science in Education. It is based on philosophical, sociological, psychological, pedagogical and legal theoretical references, considering it a dynamic, interactive, systemic, reflexive and participative process, oriented to the construction of learning, knowledge and transforming proposals. In this sense, taking advantage of the results of educational research is a social necessity to improve the quality in the preparation process of educators who go through academic training and contribute to the improvement of Higher Education, hence the need for a methodology for this purpose.

Keywords: Methodology; Theoretical-methodological tool; Supervision; Systematization of scientific results; Systematization of scientific results.

Introduction

Today's world imposes on man to live in historical conditions marked by the dynamics of complex processes of social transformations and reforms, especially in the economic, political and scientific spheres. Therefore, their training must correspond to the changes taking place in society, not only because of the environment in which they live, but also because of the study of processes, research and their own systematized experiences.

Studying what has been researched, learning its lessons, appreciating its values and mistakes becomes a theoretical, methodological and practical challenge for those who today, from different social scenarios, influence the education of new generations and seek to form a qualitatively superior man, who without ceasing to be of these times, carries in his work, the continuity of pedagogy.

For the United Nations Organization (UNESCO), there are many innovative educational experiences and practices in schools, but they need to be systematized and evaluated in order to make changes at the pedagogical level and learn from the experiences and scientific results.

In this sense, it becomes a challenge for university graduates working in different sectors and branches of society and in Higher Education to share them with others make them known and build new knowledge to transform practice.

This led to the search for research results that would reveal the scientific nature of this problemical, among them, at the international level, the research carried out in Latin America by various authors, among which Ramos (2002) stands out. These authors limit systematization to the experiences of social action projects.

In Cuba, authors such as: Ramos (2003), Addine (2005), (2008), Yanes (2014), and Mena (2016), among others, stand out.

Said authors expose projects; contributions of teaching figures, proposal of techniques for systematization recording, the characteristics and structure of booklets, manuals, notebooks, models, conceptions and a strategy for food and nutrition education. However, none is specified in the Master of Science in Education (MCE), and there is a lack of a methodology to

guide on how to make these reviews and the systematization of scientific results for the sake of a better use of educational research. Hence the need to develop a scientific pathway that allows it.

Development

In the pedagogical sciences, the definition of methodology has several interpretations, depending on the purpose for which it is established. Hence, Bermúdez and Rodríguez (1996), De Armas (2006) and Valle (2007), agree in considering that it constitutes "a systemic sequence of stages, each of which includes actions or procedures that depend on each other and that allow the achievement of certain objectives".

In this study, the methodology proposed responds to the need to contribute to the process of systematization of scientific results in the Master's Degree in Educational Sciences, taking into account, the preceding studies and research of authors such as Ramos (2002), García (2009), Addine (2010), Chirino (2011), Yanes (2014), Mena (2016), among others.

In spite of this, it is evident the need to continue deepening this process, attending to the demands of the current postgraduate academic formation, which demands a work contextualized to the existing realities, being essential to contribute with the process of systematization of scientific results in the Master's Degree in Educational Sciences, for the solution of problems of the educational practice through research.

Consequently, in the systematization carried out on the concept of methodology, it is noted that it has been defined in various ways, which vary depending on the level from which they are defined. This depends on whether it can be conceptually understood from a general, particular or specific point of view.

In outlining the structure of the methodology, the criteria proposed by Bermudez and Rodriguez (1996) are assumed, considering that it:

By didactic arrangement it possesses two apparatuses: the theoretical or cognitive apparatus and the methodological or instrumental apparatus. The former makes evident its legal and

categorical constitutive body. The legal body of the methodology is configured by means of laws and pertinent principles; its categorical body is expressed in the categories and concepts strictly positive among them. The instrumental apparatus presupposes the methods, procedures (techniques) and means (...) to be instrumented in practice (Bermúdez and Rodríguez, 1996, p. 15).

This article assumes the conception of methodology as a cognitive theoretical component and an instrumental component. Therefore, in its interrelation, it is conceived as a process and as a result.

The process dimension of methodology implies a succession of stages containing actions and/or procedures, the latter in order to explain how the methodology operates in practice. Hence, the integration of stages, methods, procedures, means and techniques and the requirements that will be taken into account during the development of the process.

Meanwhile, the dimension as a result of the methodology, expresses from a certain ideal resource, the manifestation of the methodology as a whole. In addition, of the relationships that occur between the elements that compose it structurally.

The conception of the methodology has two components, the first one theoretical or cognitive. These are constituted by the concepts, characteristics and principles that support the systematization of scientific results in the Master of Science in Education, hereinafter (SRCMCE).

The other component is the methodological or instrumental one, structured by four stages with their corresponding objectives, actions and methodological instrumentation, in order to reach the foreseen purpose. Among these there are systemic relationships, with a logical and orderly sequence of activities and resources, which enable the methodology to be flexible, integrative, developmental, systemic and systematic, so as to achieve a dynamic in the process of systematization of scientific results in the Master's Degree in Educational Sciences.

In this sense, for the operation of the methodology, the principles that are based on the pillars of the process of systematization of scientific results and theoretical bases that direct and guide

this process, as proposed by Addine (2005), are taken into account, among which the following are pointed out: the unity of the scientific and ideological character of the pedagogical process, linking education with life, the social environment and work; the unity of the instructive and the educational in the process of education of the personality; the unity of the affective and the cognitive; the collective and individual character of education and respect for the personality of the learner as well as the unity between activity, communication and personality.

On the other hand, the materials and methods used allowed carrying out a descriptive cross-sectional study with 58 master's students studying for the Master's Degree in Educational Sciences at the University of Guantánamo in the period 2018-2019. These were subjects of a pedagogical pre-experiment, where the essential motivation was the implementation of the methodology that was designed in the pedagogical practice. The results of the survey aimed at the diagnosis of the state of the systematization of scientific results in the Master's Degree in Educational Sciences were considered as the initial test, and the results obtained after the application were considered as the final test. Results and discussion

The proposed methodology consists of four stages that contribute to the process of systematization of scientific results in the Master of Science in Education (SRCMCE). As described below:

The four stages, their actions and methodological implementation are described below.

The first stage: diagnosis and sensitization, was aimed at characterizing the teachers and tutors of the faculty as well as the members of the Academic Committee of the Master's in Educational Sciences, to whom the proposal is addressed in order to analyze their current knowledge, skills and attitudes to undertake the SRCMCE process. At this moment, a diagnosis is made, with a survey and an interviewed. Actions were carried out such as: the review and analysis of documents governing Academic Training, as well as the Master's Degree in Educational Sciences and methodological preparation of teachers, tutors, members of the Academic Committee of the referred Master's Degree and master's students in the principles, functions and methodology of the diagnosis, in the methods and techniques of study that allowed exploring the SRCMCE.

Finally, for awareness-raising, an exchange was promoted with the faculty members of the 6th edition of the MCE group in which the need and timeliness of the work to be done to contribute to the SRCMCE process and consciously involve the personnel selected for the awareness-raising activity was based. It also highlighted the potential of the MCE programs for SRCMCE.

Second stage: Planning, aimed at ensuring the organized and efficient planning of all the actions that were subsequently carried out as part of the implementation of the Methodology.

Planning is the starting point for any process, and the SRCMCE process is no exception. Priorities were established in this sense, in order to achieve superior development. Taking as a starting point the results of the diagnosis, the activities for the realization of the SRCMCE were planned, such as the theoretical and methodological preparation of the participants of the process of systematization of scientific results in the MCE, through methodological meetings, updating conferences, methodological workshops, demonstrative methodological classes, the design of the course program as a fundamental modality.

All this aimed at updating the faculty in the theoretical-methodological contents that support the SRCMCE process and the activities to be carried out were designed in terms of establishing an adequate preparation for SRCMCE, which allows the improvement of the professional research performance of the master's students.

Third stage: Realization, the actions are developed from the different forms of professional improvement proposed for the application of the Methodology for the SRCMCE: workshop, course and self-improvement as a way to contribute to the improvement of the improvement, based on the potentialities and limitations manifested by the master in their professional investigative performance, supported by the methodological work methods selected as part of the work.

This stage focused on carrying out the planned actions for the SRCMCE process, in a way that allows its materialization and valuation. The conditions were created for the development of the planned activities, realization of the activities for the SRCMCE.

The teacher, using concrete examples, demonstrated to the students the importance of the

SRCMCE for their formation as future masters, orientation to the student the algorithm for the realization of the SRCMCE. Conducting integrative seminars for the SRCMCE.

The materialization of the proposed actions constitutes the implementation of the designed program. As well as the deployment for the realization of the SRCMCE process.

Fourth stage: Evaluation and feedback, allowed checking the fulfillment of the planned actions, taking into account the behavior of the actions of the previous stages, in such a way that there was a feedback, based on the assessments of their essential elements, and determining the necessary corrective actions for their improvement in the next period. Instruments were applied with the use of different research methods and techniques to determine the real needs of teachers and tutors; in this, the criteria of the participants about the conceived activities were expressed.

As well as an interview to teachers and tutors of the faculty with the purpose of knowing their criteria regarding the training received on the SRCMCE process; pedagogical tests to obtain information about the most significant experiences and transformations achieved in the realization of the activities on the SRCMCE. Instruments were elaborated, applied and processed to evaluate the effectiveness of the teaching activities carried out and the preparation of the teacher.

Feedback, through registration and control, and operations, to evaluate the quality of the performance results of the participants in the preparation process, controls the interaction spaces between the pedagogical collective, professors and tutor teacher, and the student.

The results of the implementation of the methodology are shown in tables 1 and 2. In general, from the results of the instruments applied and their interpretation, it is inferred that the variable Systematization of scientific results in the Master's Degree in Educational Sciences at the University of Guantánamo is inadequate, which is corroborated by the evaluation of each of its dimensions, as summarized in table 1.

Table 1. Evaluation of dimensions

DIMENSIONS	EVALUATION
Cognitive	Inadequate
Procedural	Little adequate
Attitudinal	Inadequate

Source: Self elaboration

With the analysis of the evaluation of the dimensions, it can be concluded that the variable is evaluated as little adequate, which is confirmed by the evaluation of each of the dimensions that make up the variable, as shown in Table 2, where the general elements of the variable are provided.

Table 2. General behavior of the variable Systematization of scientific results in the Master in Educational Sciences.

Cognitive Dimension DI1.1A					
		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Inadequate	106	85.5	85.5	85.5
	Little adequate	16	12.9	12.9	98.4
	Adequate	2	1.6	1.6	100.0
	Total	124	100.0	100.0	
Procedural Dimension DI1.2A					
		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Inadequate	53	42.7	80.3	80.3
	Little adequate	11	8.9	16.7	97.0
	Adequate	2	1.6	3.0	100.0
	Total	66	53.2	100.0	
Lost	System	58	46.8		
Total		124	100.0		
Attitudinal Dimension DI1.3A					
		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Inadequate	57	46.0	86.4	86.4

	Little adequate	9	7.3	13.6	100.0
	Total	66	53.2	100.0	
Lost	System	58	46.8		
Total		124	100.0		
DI1.1D					
		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Inadequate	4	3.2	3.2	3.2
	Little adequate	21	16.9	16.9	20.2
	Adequate	99	79.8	79.8	100.0
	Total	124	100.0	100.0	
DI1.2D					
		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Inadequate	1	.8	1.5	1.5
	Little adequate	12	9.7	18.2	19.7
	Adequate	53	42.7	80.3	100.0
	Total	66	53.2	100.0	
Lost	System	58	46.8		
Total		124	100.0		
DI1.3D					
		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Inadecuado	2	1.6	3.0	3.0
	Poco adecuado	7	5.6	10.6	13.6
	Adecuado	57	46.0	86.4	100.0
	Total	66	53.2	100.0	
Lost	Sistema	58	46.8		
Total		124	100.0		

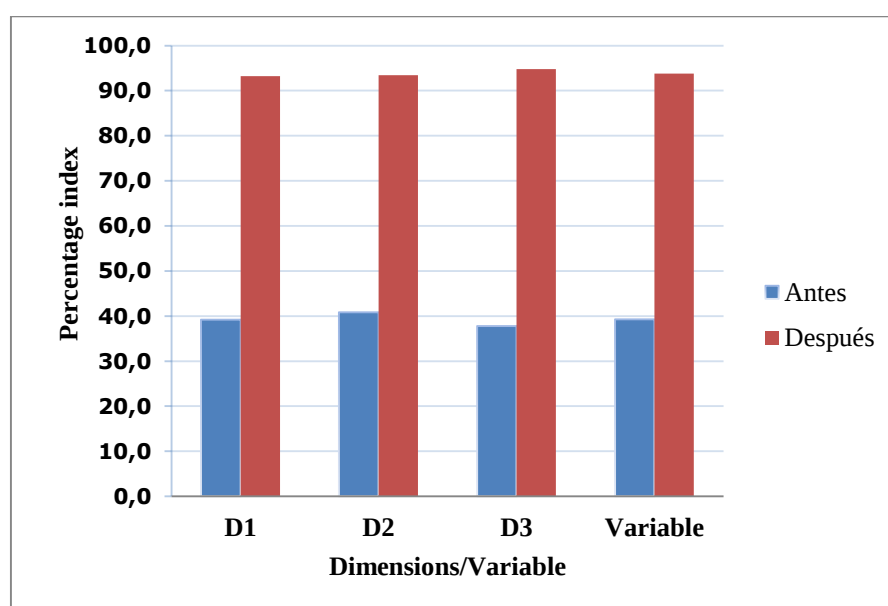
Source: Self elaboration

Graph 1 is shown below, which reflects the behavior of the implementation of the methodology for the systematization of scientific results in the Master's Degree in Educational Sciences

designed; the preparation of the master's students to face this process was significantly increased.

In the processing of the data obtained, the statistical procedure used by the researchers of the Central Institute of Pedagogical Sciences was applied. The weighting or weight indexes were used as a measure of central tendency for ordinal scales, achieving in a quantitative way, to obtain a more precise meaning than the median and the mean, as well as to achieve an index that takes into account the differences between the value scales (Inadequate, Poorly Adequate, and Adequate) that qualitatively the different categories of the answers do not represent the same degree of attitude.

Source: Self elaboration



Graph 1. Status of the systematization of scientific results in the Master in Educational Sciences before and after the application of the proposed Methodology.

Conclusions

The analysis of the current state of the systematization of scientific results in the Master's Degree in Educational Sciences, revealed the insufficiencies of the master's student for its application in his thesis, which are manifested in theoretical, procedural and attitudinal aspects during the development of the research. However, so far in the research carried out, no methodological tool has been found to contribute to this process at the University of Guantánamo.

The methodology made it possible to increase the preparation of the master's students for the systematization of scientific results in the Master's Degree in Educational Sciences, which means a qualitatively superior contribution to the transformation of their professional, research and academic performance.

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