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Significados atribuidos al concepto de metodología de la investigación por formadores de un doctorado en educación

Meanings Attributed to the Concept of Research Methodology by Brainers of a Doctorate in Education

Sentidos atribuídos ao conceito de metodologia de pesquisa por educadores de um doutorado em educação

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Resumen

En el presente trabajo se reportan visiones en torno al concepto de *metodología de la investigación*, que emergieron al identificar y organizar significados inferidos del discurso de profesores de un doctorado en educación. Algunos planteamientos de quienes han estudiado la dinámica de las culturas académicas fueron utilizados en el análisis e interpretación de lo encontrado. El enfoque del estudio fue cualitativo, se realizó en congruencia con las características del método de estudio de caso único y se utilizó la técnica del grupo focal para explorar los significados interiorizados por los formadores participantes. Entre las visiones predominantes en torno al concepto de *metodología de la investigación*, se detectaron dos: una normativo-instrumental y otra constructiva, las cuales fueron consideradas como rasgos de al menos dos subculturas académicas coexistentes en la institución que ofrece el doctorado, lo cual es explicable por la diversidad de procedencia, formación y trayectoria de los profesores participantes. No obstante, se admite la posibilidad de negociar las diferencias de significado e interpretación (Bruner, 1990), de tal manera que el discurso académico se convierta en la principal mediación para hacer inteligible lo que los investigadores adscritos al programa sustentan y realizan en su oficio de investigadores y en su función de formadores.

Palabras clave: discurso académico, doctorados en educación, formación de investigadores, metodología de la investigación, significados.

Abstract

This paper reports visions around the concept of *research methodology*, which emerged when identifying and organizing inferred meanings from the discourse of professors of a doctoral program in education. Some approaches of those who have studied the dynamics of academic cultures were used in the analysis and interpretation of what was found. The study approach was qualitative; it was carried out in congruence with the characteristics of the single case study method and the focus group technique was used to explore the inner meanings by the participating trainers. Among the predominant views on the concept of research methodology, two were detected: one normative-instrumental and the other constructive, which were considered as features of at least two coexisting academic subcultures in the institution offering the doctorate, which is explainable by the diversity of backgrounds, training and trajectory of the participating professors. However, the possibility of negotiating

the differences of meanings and interpretations is admitted (Bruner, 1990), in such a way that the academic discourse becomes the main mediation to do it in an understandable way, because the researchers enrolled in the program sustain and they perform in their job as researchers and in their role as trainers.

Keywords: academic discourse, doctorates in education, research training, research methodology, meanings.

Resumo

No presente trabalho, são relatadas visões em torno do conceito de metodologia de pesquisa, que emergiram ao identificar e organizar os significados inferidos do discurso de docentes de um doutorado em educação. Algumas abordagens daqueles que estudaram a dinâmica das culturas acadêmicas foram utilizadas na análise e interpretação do que foi encontrado. A abordagem do estudo foi qualitativa, decorreu de acordo com as características do método de estudo de caso único e utilizou-se a técnica de grupo focal para explorar os significados interiorizados pelos formadores participantes. Entre as visões predominantes em torno do conceito de metodologia de pesquisa, foram detectadas duas: uma normativa-instrumental e outra construtiva, que foram consideradas como características de pelo menos duas subculturas acadêmicas coexistentes na instituição que oferece o doutorado, o que se explica pela diversidade origem, formação e trajetória dos professores participantes. No entanto, admite-se a possibilidade de negociar as diferenças de sentido e interpretação (Bruner, 1990), de modo que o discurso acadêmico se torna a principal mediação para tornar inteligível o que os pesquisadores atribuíram ao apoio do programa e realizam em seu ofício. de investigadores e no seu papel de formadores.

Palavras-chave: discurso acadêmico, doutorado em educação, formação de pesquisadores, metodologia de pesquisa, significados.

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Introduction

The academic language that is used in a field of knowledge becomes known and internalized in multiple ways, for example: the publications generated by researchers in the field, the discourse that they use in oral communications, the terms used by the educators of researchers in his interlocution with the students, among others. The fact is that facilitating the immersion of trainee researchers in the academic language of the field of knowledge in which they will have to work is one of the fundamental objectives of the research training processes. In this sense, the appropriation of a language is not reduced to the passive internalization of something static and non-modifiable; On the contrary, in the present work it is understood as critical appropriation (Oberti and Bacci, 2016) open to questioning, modification and the incorporation of new elements.

The postgraduate level was chosen as the space for the present study because, although research training needs to be addressed at all educational levels, as has been argued in previous works (Moreno, 2005), it is expected that the actors of postgraduate students (professors and students), especially doctoral students, are more familiar with the concept of research methodology and that their oral discourse and the content of their written production account, directly or indirectly, of the way in which attribute meaning to the concept. In the study reported here, the exploration was carried out with PhD trainers in education, as subjects who construct and make use of an academic language that they share with trainee researchers during interaction with them in different spaces.

The search for research on how the methodology of research in social sciences is conceptualized yields few results and these, more than contributing to the characterization of this concept, address issues related to the importance of research methodology (Arias, 6 May 2016) or with some determinants that affect their teaching (Guzmán and García, 2016; Scribano, Gandia and Magallanes, 2006). In contrast, there is a large number of publications of a didactic nature with the generic title of "Research Methodology", which express the concept in operational terms, materialized in a kind of manual on how to do research, which focus on providing guidance. about the characteristics that each element of a project or an investigation report must have; Among these publications are the texts by Schmelkes and Elizondo (2010), Baena (2017), Hernández and Mendoza (2018). Some of these books include sections in which reference is made to concepts such as science or research, but it is difficult to explicitly find the concept of research methodology, beyond what can be inferred from the set of each work. , where a kind of action route is usually proposed to carry out

certain types of research, which is specified above all in the description of methods, techniques and procedures.

Another issue that draws attention is that in most of the research reports that are published in books, theses, articles or papers, when a section with the subtitle "Methodology" is included, what is done is inform whether it is of a quantitative, qualitative or mixed study, mention the method used and the instruments, but a conceptual theoretical framework is not built that supports the choice of such methods, instruments and procedures, in such a way that a logical articulation can be perceived -argumentative in what can be called a methodological construction in a research With this concern already present, for a decade, Moreno, Jiménez and Ortiz (2011a) illustrated one of the multiple possible ways in which a construction like the one just recently could be carried out. mentioned.

Thus, around research methodology, as a concept handled with multiple meanings by researchers and by those who are trained for research, there are a large number of questions that can be raised: does it make sense to reduce the meaning of the concept to a definition of the treated type of the method? Is it about conceiving it only as the outline of a route to follow in an investigation?, what is capable of doing who considers himself to have a solid methodological training?

The search for sustained answers to questions like the ones just presented gave rise to a macro research project entitled “The critical appropriation of academic language as a mediation in the training of researchers. The case of the concept of research methodology”, in which the present study is inserted.

Theoretical-conceptual referent

Investigating about meanings demands taking into account that they share with social representations, beliefs and implicit theories the characteristic of being built and internalized in interaction with others; therefore, this construction not only takes place in the order of the cognitive, but also in the field of the sociocultural (Castorina, Barreiro and Toscano, 2005). The construction and internalization of the meanings attributed to concepts typical of a field of knowledge production implies immersion in an academic culture and, as a consequence, the appropriation of the language that prevails in it, which becomes a relevant objective of researcher training processes (Moreno et al., 2011b).

The academic language of a field of knowledge is appropriated in dialogue with the community of researchers who are legitimate members of the field in question, recognition

that has been given to them by their peers based on the quality, continuity, and relevance of their academic production. In said language, concepts have been incorporated whose meaning appears, implicitly or explicitly, in the oral or written discourse with which the members of the academic community communicate, in the characteristics of the products they generate, in the ways in which they design the programs aimed at training future researchers in the field, as well as the specific actions they carry out within the framework of the training strategies they have selected.

While learning an academic language implies immersion in a culture, in this study it was assumed, as stated by Moreno et al. (2011b), the following:

> In an academic culture, a set of common meanings can be shared about the generation of knowledge (what it consists of, what makes it valid, who is entitled to do it, how to train those who do it); the forms of mediation so that others have access to knowledge (how to mediate, for what purpose) and its socialization (what to disclose, for which public, with what characteristics, for what purposes) (p. 9).

In relation to this concept, the work cited revealed that, within each of the doctoral programs in education that were part of its universe, various academic cultures coexist with a certain degree of cohesion, that is, sometimes with more shared elements. than others, whether it is about meanings attributed to concepts, epistemological or ontological positions, or beliefs that are reflected in the forms of action of both trainers and students. This finding coincided with what Fairbrother and Mathers (2004) maintain about the existence of combinations of academic cultures, a category that allows analyzing shared perceptions that bring with them norms and ways of life in relation to academic work.

On the other hand, Deem and Brehony (2000) point out that it is difficult to think of monolithic cultures given that there are different roles, types and status of knowledge within the communities where they are produced; For this reason, to talk about the exchange between these elements, they use the notion of cultural traffic, a position that coincides with that of Bruner (1990), who introduces the pattern for what could be called a dynamic vision of culture (as opposed to a static and monolithic vision), because when he affirms that "our way of life, culturally adapted, depends on shared meanings and concepts, and also depends on shared forms of discourse that serve to negotiate differences in meaning and interpretation" (p. 29) leaves open the possibility, not only of the existence of differences in meaning and interpretation within cultures, but of discursive forms through which it is

possible to negotiate (reformulate, reconstruct) said differences, which, in turn, admits a path for the rethinking or the construction of new meanings within a culture.

In the present study, the approach to the various meanings attributed to the concept of research methodology by educators of a doctorate in education was made with the purpose of identifying and characterizing the nature of the meanings expressed, as well as the elements that are they have incorporated into these as priorities, which allowed an interpretation of what was found in terms of academic cultures to be made later.

Among the various ways of conceptualizing research methodology, those that have the greatest affinity with that of this study are those that refer to "the analytical and critical study of research methods" (Asti, 1968, p. 16), or to "the critical reflection in charge of studying the emergence, development and validity of the methods used in science" (García, 1996, p. 65); while the affinity is lower with those that focus on the analysis of specific procedures used in investigations, or on the specification of techniques, instruments and procedures, which although necessary, is not enough to characterize this concept, especially from the use that is given to it by the actors of the training processes.

Here the concept of research methodology is attributed a meaning equivalent to that of 'methodological construction', understood as the logical and coherent articulation of a theoretical-conceptual framework from which the decision-making about which methods, techniques and procedures are epistemologically argued. Instruments are relevant to the approach to the object of study of interest, which is also a conceptual construction carried out by the researcher. This is a meaning that was explained by Moreno et al. (2011a) as follows:

> One of the most complex challenges that the researcher faces once he has advanced in the construction of an object of study to the point of having specified what he wants to know, is that of making methodological decisions; doing so implies, in principle, a reflective return (Hidalgo, 1992) to the task of conceptual construction of the object, in order to be able to argue why it is pertinent to approach it using a certain method, as well as certain techniques and instruments. (p. 143).

The same authors complement their assertions by giving shape to what can be an argumentative clue to arrive at making methodological decisions, which they expressed as follows:

> The nature of said argumentation can be illustrated in a large sequence such as the following: given that the object of study built is of such a nature and characteristics, that it is being conceived in affinity with such a theoretical perspective, that it is intended to know such things about it , that this requires approaching such a universe of study (people, institutions, communities, etc.), then the method that is relevant is such and in congruence with that method, such techniques and instruments will be used (Moreno *et al.*, 2011a, p. 143).

Approach, method, subjects, techniques

With the support of the theoretical-conceptual referents explained in the previous section, the following decisions were made: the focus of the study was qualitative, the inductive route and the approach to few subjects were privileged, without the intention of generalizing results, but with the intention to build an overview of meanings present in the discourse of the participating teachers or that can be inferred from it. An analysis was carried out paying attention to the similarity and diversity of what was found, which was interpreted in terms of what this reflects on academic cultures. The method chosen was the single case study (Stake, 2007), made up of the group of trainers who perform this function in a doctoral program in education recognized by the National Quality Postgraduate Program (PNPC). A doctorate with these characteristics was selected because it was considered that, in this type of program, academics with a high level of consolidation are incorporated both in the profession of researcher and in that of trainer, without one thing necessarily implying the other.

The subjects who were invited to participate in this research were academics who performed said function in the selected program. The invitation was made openly to all the trainers that make up the basic academic nucleus of the program and had the favorable response of seven academics, whose characteristics are shown in Table 1.

Table 1. General characteristics of the participating trainers

Gender	Age	Degree in	Mastery	Doctorate
Female (D1F1)[1]	58	Pedagogy (Universidad Nacional Autonoma de Mexico [UNAM])	Education (Harvard)	Philosophy and Educational Sciences (Barcelona)
Female (D1F2)	48	Psychology (UNAM)	Experimental General Psychology (UNAM)	Experimental Analysis of Behavior (UNAM)
Male (D1F3)	44	Economy (Universidad Autonoma del Estado de Morelos [UAEM])	Urban and Regional Studies UAEM	Ciencias Económicas (Universidad Autónoma Metropolitana [UAM])
Male (D1F4)	39	Psychology (UNAM) Philosophy (Universidad Autonoma de Zacatecas [UAZ])	Psychology (UNAM)	Pedagogy (UNAM)
Female (D1F5)	54	Communication Sciences (Universidad Autónoma de Baja California [UABC])	Educational Sciences (UABC)	Comunication (La Laguna, España)

[1] Code to designate the participant respecting the anonymity.

Female (D1F6)	63	Psychology (UNAM)	Psychology (UNAM)	Education (Universidad Autonoma de Sinaloa [UAS])
Male (D1F7)	60	Physical Oceanography (UABC)	Educational Sciences (UABC)	Educational Sciences (UABC)

Source: self made

The general characterization of the academics participating in the focus group showed that:

- The average age is 52 years.
- Only one of the participants studied in the area of education from undergraduate to doctorate.
- Three of the participants carried out most of their studies in the area of psychology.
- One participant was trained in the area of communication and one more in the area of economics.
- One participant, although trained in the area of education in his master's and doctorate, studied for a bachelor's degree in an area with little ties to the social sciences.
- Two of the seven participants carried out some of their studies in educational institutions in other countries.

The general features of these professors coincide with characteristics that are usually perceived in researchers/trainers who participate in postgraduate courses in education in Mexico (Torres, Rosas and Morales, 2021): mature-age professors, a minority trained specifically in the area of education, with more presence of those who were trained in related areas such as psychology, sociology, philosophy, among others, but also with some academics whose training is relatively unrelated to the area of education, such as, in this case, the fields of economics and oceanography. Although there is a consensus that, given the complex nature of educational situations, research in the field of education needs the support of multiple disciplines, it happens that when researchers who work as postgraduate educators in education have little knowledge of the field, It is difficult for those who are trained as

educational researchers to master the trade, an issue that would be worth returning to in a later work.

On the other hand, a fundamental way to identify or infer those meanings that a person has internalized is the language in situ, the one that they use directly when carrying out their work, in this case in academic communities. Considering the above, among the alternatives to approach the academic language of the participating trainers, it was decided to use the focus group technique (Mella, 2000), because it is a way that allows direct oral communication with the participants and that this can be videotaped so that the voices and the image of what happened in the group dialogue can be taken up as many times as necessary for analysis purposes.

The questions on which the dialogue with the participants revolved focused on the initial meaning they attributed to the concept of research methodology, together with the way in which it evolved —if applicable—, the way in which they have understood what it is learning or teaching research methodology, as well as small debates, for example, if the research methodology is unique or not.

Once the transcription of everything expressed in the focus group was available, a work path supported by content analysis was designed (Da Silveira, Colomé, Heck, Nunes da Silva & Viero, 2015), which was oriented initially to select units of the text in which meanings about research methodology could be directly detected, or that provided elements to infer meanings from what was said by the participants.

The look for the analysis always had two dimensions: that of the subject who expressed his ideas and the contrast with those of the other participants, with the purpose of building, at a given moment, an overview of the group contributions as a basis for interpreting and establishing conclusions.

Results

The presentation of results was organized by thematic nuclei, derived from the central aspects that appeared in the dialogue and from the small debates that arose in the focus group. To illustrate the analysis procedure in greater detail, it is presented in a comprehensive way how the contributions of the trainers were processed until the approaches that are sustained in the following sections are derived from them.

The first ideas and the subsequent evolution

At the beginning of the focus group, the participants were asked to recall their first approaches to the concept of research methodology. The academics shared their experiences in this regard, some of them also referred to the evolution of their first ideas until they reached the way in which they currently conceive the research methodology. There were also those who maintained that the meaning that he initially attributed to the concept has not changed. Below are some ideas extracted from the original speech of the participants in the focus group with the intention of highlighting similarities and differences between contributions from the same subject.

Table 2. Evolution of meaning in the D1F1 trainer

Main idea	Evolution of the idea
In the high school we were taught the scientific method, with that adjective; [his steps] were, as I remember: observation, experimentation, hypothesis, and theory or law. That is the idea of the method that I learned, the only possible method in the world [to produce knowledge] (D1F1).	Now I see the methodology as an approximation, like understanding the approach, understanding the perspective from which the methods are worked. Working [from a] qualitative methodologies perspective, what I understand is that methodology is that great form of approximation shared by different methods such as ethnography, action research, etc. For me, it is this umbrella that gives meaning to qualitative approaches, that would be the methodology (D1F1) for me.

Source: self-made

In the evocation of the participant identified with the code D1F1, it can be seen that, when presenting her initial idea, she did not refer to the concept of research methodology as such, what she pointed out is that, during her first approach to it, she was taught that there was a unique method with which science worked and with which knowledge was produced following the same route in all cases. The foregoing leads us to think of two possibilities: 1) that based on what she was taught at that stage, she considered the terms method and methodology as synonymous; 2) that the elements available to her did not allow her to clarify what was being referred to by the expression research methodology, and what she was able

to assimilate is that there was a unique scientific method that specified the path to follow. It can be inferred then that the first meaning that this academic attributed to the concept in question was that of a path already built by those who did science, embodied in a method considered the only valid one to produce scientific knowledge.

As the meaning that she had associated with the concept of research methodology evolved, the participant expressed that she now conceives of this as the perspective from which the methods are worked and explained that she works from a "perspective of qualitative methodologies", which allows us to infer that it refers to the set of principles/assumptions that characterize one of the great research paradigms or logics in force in social research, to which authors such as Taylor and Bodgan (1987) or Delgado and Gutiérrez (1995), among many others, have been referred to in detail. It also uses the terms approach, umbrella and forms of approach to refer to that perspective or great analytical look that is tended towards an object of study about which knowledge is intended to be generated, to decide which form of approach will be relevant, that is, to arrive at any given time to the decisions on method(s) and technique(s) to be used.

In this way of understanding research methodology, there is no room for the idea of a single method, nor for the possibility of first choosing a method and then thinking about the perspective from which it will work; The great lens from which knowledge about the constructed object of study will be generated is the perspective to which reference has been made, in such a way that it is possible to work with different methods oriented by the same set of principles/assumptions. It can be inferred that this participant assumes that an approach, a perspective or a form of approximation have behind it elements of a theoretical, epistemological, ontological and sometimes ideological order, which define a certain position of the researcher.

A partially coincident way in the perception of the person who talks about their process of appropriation of meaning, in what refers to the initial stage, but different in the later evolution, is perceived in the contributions of the teacher identified with the code D1F2.

Table 3. Evolution of meaning in the D1F2 former

Main idea	Evolution of the idea
During our training, the method we were taught was the scientific experimental method, that is the method we learned in high school and in the first years of university (D1F2).	As one goes deeper into research, one learns that there are other methods..., actually, the research methodology is a discipline. As a field of research, it has been growing and I think it will evolve because new methods will emerge, new ways of approaching different phenomena that will interest us in each science, in each discipline (D1F2).

Source: self-made

The initial idea of this teacher coincides with the previous testimony that, in order to produce knowledge, it was necessary to use the experimental scientific method, at least that is how she learned during her initial training. She did not name it as the only method, but the fact of speaking of it in the singular allows us to infer that she did not consider other alternatives. On the other hand, by not referring to the concept of methodology in this first idea, it is inferred that she conceived the terms methodology and method as synonyms.

Later on, the evolution of the meaning attributed by this professor to the concept in question includes the existence of a multiplicity of methods, now the research methodology appears as a discipline whose focus of study is the methods on which the production of knowledge can be supported. . The previous approach is consistent with the concept of discipline that Rus maintains (June 12, 2021):

> The difference between science and [scientific] discipline is that the former refers to the way of approaching the explanation of the phenomena that surround us, while discipline is an orderly and methodical way of studying a specific branch of that knowledge. (párr. 1).

However, when this participant affirms that she has realized that research methodology is a discipline that studies the methods on which the production of knowledge is based, in this approach an evolution is identified in the sense of accepting the existence of diversity of methods instead of just one, but it is noteworthy that it does not consider another or other functions of the research methodology, for example, the one linked to the epistemological and ontological reflection that leads the researcher to delineate and sustain a form approach to the phenomena of interest, aspects to which Gianella (2006) alludes. It is

worth wondering if, in this case, the absence of explicit reference to theoretical, epistemological elements or ideological positioning by the teacher implies that there is no awareness that these elements are present, or it just seems to her that they are not the elements of greater weight in the meaning that she attributes to the concept.

Other elements of interest for the analysis of the meanings attributed to the research methodology appear in the contributions of the participant designated as D1F4, as shown in Table 4.

Table 4. Evolution of meaning in the D1F4 format

Main idea	Evolution of the idea
For me, the methodology was more like a kind of synonym for research design, in the degree of the book by Campbell and Stanley (1973) was very entrenched, then that of Kerlinger (1975) in its first edition, but always with that idea. As a technique, thinking about the research design from the perspective of the scientific method, it was what defined science: the scientific method, we had to follow it (D1F4).	Now I understand the methodology a little more as a vision of the different methods, or the study of the different methods, or the different possibilities: I understand the method as the path, I have already put aside the technical vision, rather seeing it as the path: depending on the object, the objective, where one defines the paths of approach that in turn establish very particular technical elements (D1F4).

Source: self-made

In the initial idea of this participant, two elements stand out: 1) it coincides with the belief that there is only one scientific method and 2) methodology and research design are handled as synonyms, the latter conceptualized with emphasis on technical aspects, always subordinate. from the perspective of the scientific method. In this case, the conceptual evolution is manifested in the diversity of methods and in overcoming the merely technical vision to place some emphasis on the constructive element of the method, now open to defining forms of approach depending on the object of study and the objective. Of the investigation.

In the contributions of the professor identified as D1F6, which are reviewed below, there are elements that coincide with the previous ones, but there are glimpses of what could be considered a larger evolution in the meaning that she now attributes to the research methodology.

Table 5. Evolution of meaning in the D1F6 former

Main idea	Evolution of the idea
I come from an eminently positivist background, where learning methodology was learning the book by Campbell and Stanley (1973), there was nothing else to do; one had to learn from design and research (...), it was to reflect, master, experiment from that completely positivist approach to science (...); I left the degree thinking that it was only about methods, of course everyone had to be very skilled in statistical matters (D1F6).	Already in the master's degree, in the doctorate, and in the professional practice, I realized and learned that this is not the only method of seeing the world, that everyone can see it through another lens, which would be the qualitative approach with all its variants and that of mixed methods with everything it has; I was able to open my theoretical perspective about what the methodology is (D1F6).

Source: self-made

Elements of interest appear in this professor's approach, such as the awareness that her first contact with the idea of research methodology, and of science and research, was through the positivist lens of the time, which at that time meant the adoption of a hypothetical-deductive research logic and a great emphasis on learning and managing the research designs proposed by classic authors such as Campbell and Stanley (1973).

According to Ragin (2007), a research design "is a plan to collect and analyze empirical evidence, in such a way that it enables the researcher to answer any of the questions that have been raised" (p. 64). Understood in this way, the designs are different routes that can be supported by the same type of principles, they are a kind of safe plans to produce knowledge. However, at one point, this teacher refers to this diversity as if it were about methods and not designs, which suggests handling both concepts as synonyms. In contrast, when she states "one had to learn design and research", she makes use of a conjunction that suggests that learning methodology implied learning research designs, which was different from learning research, an issue that she does not specify how she understood it, but He associates it with that initial idea that "it was only a question of methods" and, furthermore, of methods supported by the principles of the positivist approach to science.

The case of the professor designated as D1F5 is striking because of the way in which she declares that she has always understood the research methodology:

Table 6. Evolution of meaning in the D1F5 former

Main idea without evolution
I have always understood and visualized the methodology as a systematic process, the same that guides me and that leads me to obtain the path towards the results, always replicable results of course. This is basically the idea of a process adapted to the needs of the environment, of the sciences, of the areas (D1F5)

Source: self-made

This professor conceives the methodology as a process to which she gives a "life of its own", as if it had an active role, external to the subject being investigated, capable of safely leading him to the results he intends to achieve. At the bottom of this approach, there seems to be the idea that there are paths designed by others, perhaps by recognized groups of consolidated scientists, based on the conception that they hold about what it means to generate scientific knowledge, and that the role of the researcher consists of in making those adaptations that it considers pertinent according to the environment, the discipline and the area in which it intends to generate knowledge. Thus, the absence of the constructive element of the process is notorious, as if the methodology had its own independent existence and the researcher only had to make adaptations for each particular investigation.

The meanings attributed to the research methodology by this group of teachers present coincidences and differences that allow them to be considered as coexisting meanings, but not shared in their entirety, as can be seen in Table 7, which was prepared by placing the ideas in parallel columns. initials and ideas that arose as they progressed in their professional career related by the researchers/trainers of this program.

Table 7. First ideas and evolution of meanings attributed to the research methodology

First ideas	Evolution
• Methodology as a study of the method. • Methodology as the knowledge of the scientific method, the only valid one to produce knowledge. • Methodology as knowledge and management of research designs in the manner of the classic authors of the time. • Methodology as attention to technical issues in research. • Methodology as a systematic process that guides the researcher.	• Methodology as a discipline focused on the study of methods. • The Methodology as a vision of the different methods, methods understood as forms of approach that are chosen or adapted taking into account the object of study and the objective of the investigation. • Methodology as a selection of pertinent techniques, procedures and instruments to work with a determined object of study. • Methodology as a form of approximation, approach or perspective from which decisions about the method are made.

Source: self-made

Learn research methodology

The professors of the doctorate in question were asked to express what it means for them to learn research methodology; With this, a way was opened for them to express meanings linked to this concept when it is considered as a learning object. Immediately, ideas expressed by some participants are presented, in the left column appears the original version declared by the trainer, and in the right, a synthesis of the referred conceptual content. Subsequently, the implications of this discourse in terms of appropriation of the concept are discussed.

Table 8. Learn methodology. Central idea of former D1F3

Idea expressed by the trainer	Learning Methodology
In a strict sense, I see the methodology as a series of techniques to fill in data that can be quantitative, qualitative, or otherwise mixed (D1F3).	It consists of knowing and using a series of techniques to collect data that can be quantitative, qualitative, or mixed.

Source: self-made

From the previous text, a meaning of research methodology referred to the knowledge and use of techniques to collect data is inferred. It is to the data themselves, not to the methods or research logic or paradigms, to which the D1F3 participant attributes the possibility of being quantitative, qualitative or mixed, an issue that can be a source of confusion among trainee researchers . On the other hand, the use of the expression to fill up with data is surprising, because it seems that it is an indiscriminate search for these, not one specifically oriented to those required in a certain investigation.

Table 9. Learn methodology. D1F7 Shaper Central Idea

Idea expressed by the trainer	Learning Methodology
Under my approach, I can imagine that the person learned about the research methodology as the big perspective, the research approach with which the different methods should be approached, a general perspective (D1F7).	It consists of knowing how to present the general perspective, or the research approach *with which the different methods must be approached.*

Source: self-made

From the previous contribution, a meaning of research methodology is inferred whose central core is the approach of the general perspective or research approach. It is striking that, instead of referring to the fact that these include elements of an epistemological, theoretical or ontological order, from which decisions are made regarding the relevance of using certain methods, in the end they are referred to as a kind of regulation from which methods should be addressed.

Table 10. Learn methodology. Central idea of the shaper D1F2

Idea expressed by the trainer	Learning Methodology
What suits my mind is that perhaps that person learned the basics of the scientific method (D1F2).	It is learning the basics of the scientific method.

Source: self-made

The manifest meaning in the previous statements is a kind of assimilation/equating of the expressions methodology and method to the idea that there is a unique method to generate knowledge, that is, the scientific method.

Table 11. Learn methodology. Central idea of the shaper D1F5

Idea expressed by the trainer	Learning Methodology
When someone says: "I learned methodology", I understand that that person understands that every time they go to do research, they need to establish a methodological process to obtain results and provide a solution to their problem (D1F5).	It is necessary to understand that, each time an investigation is going to be carried out, it is necessary to establish a methodological process, in order to obtain results and provide a solution to the problem posed.

Source: self-made

Assuming that the participant D1F5 uses the expressions methodological process and research methodology as synonyms, it can be inferred that the meaning attributed to both expressions is planning that anticipates what will be done to solve a certain research problem, whose response requires the generation of knowledge.

Table 12. Learn methodology. Central idea of the shaper D1F3

Idea expressed by the trainer	Learning Methodology
I would assume that the person has a series of knowledge regarding the different methodologies that exist. That in the first place, after having internalized a series of skills, skills to make use of these techniques, and not overlook the fact that the use of these also implies ethical and moral issues. This knowledge, these skills and abilities are related to the scientific method in general (D1F3).	This is knowledge of the different methodologies that exist, *developing abilities and skills to use these techniques*, which also implies ethical and moral issues; all related to the scientific method.

Source: self-made

Inferring the meaning attributed to the concept of research methodology in the previous approaches implies recognizing that certain contradictions or conceptual reductions appear in these, such as using the expressions methodologies and techniques as synonyms, despite the fact that in academic language they are assumed with a different connotation or affirm that it is necessary to know the different methodologies that exist, but relate their use only to the scientific method.

Table 13. Learn methodology. D1F4 trainer Core Idea

Idea expressed by the trainer	Learning Methodology
I would think that someone who claims to know the methodology knows the rigor involved in carrying out research. I would sum it up in my perspective that way. D1F4.	It is knowing the rigor that involves the development of an investigation.

Source: self-made

From these last approaches, a meaning of methodology reduced to the knowledge of a feature that must be characteristic of all research is inferred: rigor. Even when the absence of other proper or essential elements of a methodological construction is noted, this last indication leads to distinguish a trait of academic culture assimilated by at least one of the members of this community.

From an overall look at the contributions related to the way in which learning methodology is understood, a table was elaborated that links these with meanings of research methodology, some of them coinciding with those that have appeared in this text. throughout the analysis.

Table 14. Research methodology in the context of learning

Learning methodology[2]	Methodology and its meaning
Learning about the basis of the scientific method.	Methodology as learning the scientific method.
Be aware of the rigor involved in carrying out an investigation.	Methodology as care for rigor in scientific production.
Understand that each time an investigation is going to be carried out, it is necessary to establish a methodological process to obtain results and provide a solution to that problem.	Methodology as planning / forecasting of what is done to achieve the specific purposes of an investigation.
To know the different methodologies that exist, develop abilities and skills to use these techniques, which also implies ethical and moral issues; all related to the scientific method.	Methodology as knowledge and skilful use of techniques. It involves ethical and moral issues, as well as a relationship with the scientific method.
To know and use a series of techniques to collect data that can be quantitative, qualitative or mixed.	Methodology as knowledge and use of various techniques to collect data.
To knowing how to present the general perspective or the research approach with which the methods should be approached.	The Methodology as an approach of the general perspective or approach from which the methods in an investigation will have to be approached.

Source: self-made

[2] Here is a synthesis prepared by the authors of this text, but some words have been kept as they were used by the participants, since these are central to their conceptions..

Teach research methodology

One more way to explore in the focus group the meanings that the participating teachers attribute to the concept of research methodology was the inclusion of a question that raised what was the main objective that guided their intentional actions towards teaching when they were in charge of a teacher. research course or seminar in your doctoral program. This question was answered more extensively in the contributions of the trainers, as can be seen in table 15.

Table 15. Teaching methodology. Central idea of the trainer D1F6

Learning methodology[3]	Teaching methodology
I am always very provocative. In master's and doctorate I tell them: "I am going to teach you something that is very valuable: to think from a quantitative, qualitative and mixed methodology perspective. I am going to teach them the work rules for each of the perspectives, to distinguish when it is better to use one perspective or another" (...). And then I guide them to do it; they necessarily have to do it, because if they don't do it, it remains a simple speech. A combination of the theoretical referent and the methodological referent with "doing" is needed (D1F6).	It is teaching to think from a methodology perspective (quantitative, qualitative, or mixed). It implies the fact of teaching the work rules for each perspective; teach to differentiate when is the best time to use one perspective or another, and teach to combine the theoretical and methodological referent with doing.

Source: self-made

The previous contribution contains elements that are key in attributing meaning to the expression research methodology. What is supported by this participant implies that the trainer must not only teach to think from different methodological perspectives, but also to do it from the principles and work rules of each one so that the researcher in training can argue why he considers it pertinent that any of they are assumed in certain research, always taking care of the logical articulation of the theoretical and methodological referents, with the method and techniques that guide the actions that the researcher will have to carry out.

[3] Here is a synthesis prepared by the authors of this text, but some words have been kept as they were used by the participants, since these are central to their conceptions.

Table 16. Teach methodology. Central idea of the shaper D1F1

Learning methodology	Teaching methodology
I can see myself in charge of a qualitative methodology course or seminar, which is what I manage. I have all the chances to make students see what is the logic that, in this case, for me would be the methodology, what is the interpretative logic, what are its epistemological foundations, where does this type of concern for knowing reality come from, What are its philosophical foundations? I can start with the methodology, as I understand it, that is, with the great focus to obviously land on the methods, that the methods respond to that methodology; understanding the methodology we can understand the methods. The techniques have to do with the method, they only make sense in a method and they only make sense in the methodological approach (D1F1).	Make students see in relation to each research logic or major methodological approach what are its philosophical and epistemological foundations, as well as their vision of reality, from which the decisions on methods and techniques to be used in each case are then derived .

Source: self-made

From the previous approaches, a meaning of research methodology is inferred as a logic or approach (philosophical, epistemological, vision of reality) from which knowledge is built in certain research; It constitutes the basis for decision-making on methods and techniques to be used that are relevant for approaching the object of study built.

Table 17. Teach methodology. Central idea of former D1F3

Idea expressed by the trainer	Teaching methodology
A investigation methodology course, even in the doctorate, I would see it as a responsibility to be more exhaustive in the domain of the scientific method; And then, what would be the purpose? Well, basically understand the general process of how knowledge is produced, even returning to the epistemic perspective. As a professor of methodology, regardless of personal affinities with epistemological perspectives, it is a responsibility to put them under discussion. Something more advanced would be to put complementary techniques in context and coexistence, the concurrent mixed methods (D1F3).	This demands to be exhaustive in the domain of the scientific method so that the general process of how knowledge is produced can be understood, returning to the epistemic perspective. Various epistemological perspectives, methods and techniques will have to be discussed.

Source: self-made

From the contributions of the participant D1F3, a meaning associated with mastery and understanding of a general process to produce knowledge (the scientific method) is inferred. Given his emphasis on what he seems to understand as a single process, it is not clear how he also admits the existence of diverse epistemological perspectives, methods, and techniques that need to be discussed.

Table 18. Teach methodology. Central idea of the shaper D1F5

Idea expressed by the trainer	Teaching methodology
I would put the emphasis on providing them with the basic and essential knowledge of the types of methodology: qualitative, quantitative and mixed; but first I would inquire about the particular needs of the research projects of the students with whom I am going to work (D1F5)	It implies providing basic and essential knowledge of the types of methodology: qualitative, quantitative and mixed; this without losing sight of the particular needs of student research projects.

Source: self-made

In accordance with the previous approaches, the meaning of research methodology appears associated with the knowledge of types of methodology: qualitative, quantitative and

mixed. The reference to the particular needs of the students' research projects gives an idea that the choice of one of the types is linked to the specific characteristics of each project.

Table 19. Teach methodology. Central idea of the shaper D1F2

Idea expressed by the trainer	Teaching methodology
Any methodology course, whatever it is, and even more so at a doctoral level, should start with the philosophy of science (...), because it is not the method itself. We will validate the study to the extent that we are aware of the importance of how and what to investigate, and understand how valid knowledge is generated. When we start to learn, we hit a lot of limits because we are not capable of planning research in such a way that there is congruence between what I want to investigate and what I must do to achieve the purposes of that research; I think it has to do with a deficiency of epistemic, ontological awareness of what science is and what we are trying to contribute to scientific knowledge (D1F2).	It demands to start with the philosophy of science so that the student understands the meaning of the investigation and how valid knowledge is generated, so that they develop epistemic and ontological awareness, through which they support the approach of investigations in which there is congruence between what is want to investigate and what will be done (method) to achieve the specific purposes of each investigation.

Source: self-made

In the meaning attributed by the participant D1F2, the understanding of the meaning of research and how valid knowledge is generated appear as key issues, hence her insistence that, when teaching methodology, start with philosophy of science to develop epistemic awareness and ontological, which will be the basis for proposing investigations that are characterized by the congruence between what is to be investigated and what will be done (method).

From an overall view of the contributions related to the way in which teaching methodology is understood, a table was elaborated that links these with meanings of research methodology, some of them coinciding with those that have been appearing throughout analysis in this text.

Table 20. Research methodology in the context of teaching

Teaching Methology[4]	The meaning of Methodology
It demands teaching to think from a methodology perspective (quantitative, qualitative, or mixed). It implies teaching the work rules for each perspective; teach to discern when it is better to use one perspective or another, and teach to combine the theoretical and methodological referent with doing.	Methodology as knowledges of perspective (quantitative, qualitative or mixed) from which an investigation can be supported and proposed. It supposes knowing the work rules of each one and taking care of the articulation between the theoretical and methodological referents with what is done (method).
It means making students see, in relation to each research logic or major methodological approach, what their philosophical and epistemological foundations are, as well as their vision of reality, from which decisions on methods and techniques are then derived for each case.	Methodology as knowledges of the philosophical, epistemological and vision of reality foundations of each research logic (perspective, approach). Decisions on methods and techniques to be used are derived from there.
It demands to be exhaustive in the domain of the scientific method so that the general process of how knowledge is produced can be understood, returning to the epistemic perspective. Various epistemological perspectives, methods and techniques will have to be discussed.	Methodology as mastery of the scientific method as a general process of knowledge production. It is necessary to discuss various methodological perspectives, methods and techniques.
It implies providing basic and essential knowledge of the types of methodology: qualitative, quantitative and mixed. This without losing sight of the particular needs of student research projects.	Methodology as knowledges of alternatives: qualitative, quantitative and mixed, to choose which is relevant according to the specific needs of certain research.

[4] Here is a synthesis prepared by the authors of this text, but some words have been kept as they were used by the participants, since these are central to their conceptions.

It demands to start with philosophy of science so that the student understands the meaning of the investigation and how valid knowledge is generated, in such a way that they develop epistemic and ontological awareness, and thus support the approach of investigations in which there is congruence between what is wanted investigate and what will be done (method) to achieve the specific purposes of each investigation.	Methodology as development of epistemic and ontological awareness to understand the meaning of research and how valid knowledge is generated. This will support the research approach that is characterized by the congruence between what is to be investigated and what will be done (method).

Source: self-made

An overview of meanings of research methodology

The joint analysis of the contributions that the participating trainers made about the meanings that they have attributed to the concept of research methodology allowed us to present an overview, which is shown later, in which the meanings that it was possible to detect or infer appear. A review of the content of tables 7, 14 and 20 suggests that, as the dialogue between the teachers progressed during the focus group, more coincident approaches appeared between them; This could not be considered as an effect of the intervention of the person who served as facilitator of the dialogue, since she only presented the generating questions and took the turn to speak; It is worth asking, then, has there been a possible effect of the dialogue between teachers in the style of what Bruner (1990) calls negotiation of differences in meaning? This is a question that will not be resolved in the present investigation, but that we leave open to explore it with more elements in subsequent investigations.

Below is an overview of the meanings attributed by the participating teachers to the concept of research methodology:

a) Methodology as a discipline focused on the study of methods.

b) Methodology as mastery of the scientific method as a general process of knowledge production.

c) Methodology as a vision of the different methods that can be used in the investigation.

d) Methodology as knowledge and management of research designs.

e) Methodology as knowledge and skilful use of techniques to collect data.

f) Methodology as a systematic process that guides the researcher.

g) Methodology as the development of epistemic and ontological awareness to understand the meaning of research and how valid knowledge is generated.

h) Methodology as knowledge of the philosophical, epistemological and vision of reality foundations of each research logic (perspective, approach).

i) Methodology as knowledge of perspectives from which an investigation can be sustained and proposed

j) Methodology as an approach to the general perspective or approach from which the methods in an investigation will be addressed.

Throughout the analysis presented in this text, points were made regarding the use of some terms or expressions as if they were synonymous without being recognized as such in academic language, for example: methodology and scientific method, methodology and method, methodology and research design, methodology and techniques, research method and design. In addition to this form of use of the terms, there were some cases of reduction, confusion or contradiction between concepts or between elements associated with the same concept, for example, when it is stated that it is necessary to know the different methodologies that exist, but their use it is related only to the scientific method, or when the need to choose the perspective or approach from which an investigation will be carried out is argued, but then a normative function is attributed to it to establish how the methods should be approached.

Examples such as those presented in the previous paragraph were the reason for multiple reflections that allowed us to realize that the process by which meanings are constructed, internalized and, where appropriate, reconstructed is dynamic and continuous. The meanings evolve mainly from the interactions that the trainers have with their peers in institutional, national and international contexts, without it being a predetermined path; in this process the meanings become clearer and more complex. In the case of those attributed to the concept of research methodology, in the contributions of this group of professors some meanings were identified that can be considered of minimum complexity, such as those linked to the certainty that there is a unique method to produce knowledge; others in which the existence of a variety of methods, research designs and techniques is assumed; until reaching those in which the fundamental thing is to select/build the perspective or approach from which the approach to an object of study will be carried out, so that later methods

consistent with the epistemological and ontological foundations of the perspective are chosen. or approach mentioned above.

From the panorama of meanings inferred from the speech of the participating teachers, presented above, two great visions emerged:

a) A normative/instrumental vision in which the idea that what is fundamental is knowing and mastering stands out, whether it is the scientific method, if the existence of a single method to produce knowledge is sustained, or the variety of methods, designs and techniques available for use by the researcher. It is a vision characterized by the confidence that the paths to investigate are already drawn by others and it is enough to follow them, this at the expense of diluting or eliminating their heuristic character as proposals susceptible to adjustments or recreation according to the nature of the objects of study that are addressed.

b) A constructive vision in which the research methodology allows the choice/construction of a perspective from whose epistemological and ontological principles and foundations decisions will be made, both of a theoretical nature and those related to methods, designs and techniques that are used. considered pertinent to guide a specific investigation.

In the panorama of meanings expressed by the trainers of this doctorate, a greater tendency towards the normative/instrumental vision can be perceived than the constructive one, but also a kind of transition towards the constructive vision when elements of both visions appear, without contradicting each other, in the same meaning.

In another sense, in the small debate about whether the methodology is one and the methods are many, it was found that some professors have substituted the idea of existence of a unique method for the generation of knowledge (the scientific method) by that of three research logics (quantitative, qualitative and mixed), from which said production is possible. Some confusion was detected about whether the three logics mentioned above are methodologies, perspectives or methods, since they are called in any of the ways and are even referred to as something that is inherent to the characteristics of the data that is collected. This situation reinforces the idea that, in academic communities, there are processes in which the meanings attributed to concepts are clarified, specified, evolved, transformed or reconstructed. In order for this process to become more dynamic, it is necessary for the interaction, dialogue and work on common projects to become a daily occurrence among the members of the academic community.

Discussion

A global look at the results section allows us to perceive the diversity of meanings attributed to the concept of research methodology by the teachers participating in the study, but also the presence of common features between said meanings. A possible explanation of what was found is its connection with the training trajectories of the participating teachers, the different disciplines in which they became experts, their professional experience, the diverse cultures in which they have been immersed during their development and consolidation as researchers. , among others. It is worth considering, then, the meanings attributed to the research methodology by the participating teachers, should they coincide in their entirety? How can the fact that there is no total coincidence between the meanings about research methodology that they have internalized be interpreted? the professors of the same program? Is it a matter of the diversity of academic cultures or the existence of subcultures?

According to the characterization of the trainers participating in this study (see table 1), they are of different ages, come from different training areas and institutions, have experienced consolidation experiences as researchers in various disciplinary fields; then, they have internalized academic cultures with similarities and differences with the one that has been conformed in the institution where they now coincide; in such a way that the meanings that have been attributed to the research methodology coexist and evolve in that traffic of cultures to which Deem and Brehony (2000) refer, with the possibility of becoming subcultures of this. Clark already points out (1991):

> The department, chair or institute are simultaneously part of the discipline and part of the establishment, merging them and deriving their strength from this combination, which explains the fragmentation of the academy into subdisciplines or subfields and of their cultures into subcultures. (p. 61).

In this sense, the conclusion of this study is immediately established, fully aware that the fact that the exploration of meanings has been carried out only orally, in a single focus group session and with a small number of teachers constitutes in a limitation of the study; however, it allowed opening a route for the exploration and construction of a panorama of meanings as a basis for other searches, in a subject in which there has been little production of knowledge.

Conclusion

In this research, it was not expected to find that the group of trainers participating in the study reflected the existence of a monolithic culture within the institution that offers the program, given that diverse cultures coexist in the communities that the members of their academic nuclei internalized. throughout his training, his experience and his professional career; but it does detect visions that shape and give meaning to the meanings that teachers have internalized about research methodology. The latter was possible and revealed the existence of two great visions of the research methodology: the normative/instrumental vision and the constructive vision, which can be considered as non-unique features of at least two academic subcultures that coexist in the institution. .

Although the meanings attributed by the participating professors to the concept of research methodology are not fully shared, they do have some common ground from which it may be possible to negotiate differences in meaning and interpretation, in such a way that academic discourse becomes the main mediation to make intelligible what the researchers assigned to the program support and carry out in their profession as researchers and in their function as trainers.

Research line in process

The findings of this study are an open door for new questions: how is the way in which teachers attribute meaning to the research methodology reflected in their academic production (articles, books or others) and in the discourse with which they elaborate the curricular design of the postgraduate programs that attend? Researchers in training, do they internalize the same meanings constructed by their professors? How are these meanings reflected in their doctoral theses? These questions are incorporated into the macro project from which the present study was derived and the respective research tasks are already underway with which an answer will be formed for them.

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