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Ensayos

Los paradigmas de la investigación: un acercamiento teórico para reflexionar desde el campo de la investigación educativa

Research Paradigms: A Theoretical Approach to Reflect from the Field of Educational Research

Os paradigmas de pesquisa: uma abordagem teórica para refletir a partir do campo da pesquisa educacional

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Resumen

El presente artículo académico busca responder la pregunta: ¿qué configuraciones teóricas se asumen desde los paradigmas de la investigación y qué nuevos retos se plantean en torno a ellos desde la investigación educativa? Para ello, se parte de la revisión teórica de los conceptos de *conocimiento, epistemología* y *paradigma*. Particularmente, se profundiza en el concepto de *paradigma* en cuanto que este sirve de marco para la comprensión de los fenómenos de la realidad y se identifican cuatro variantes: positivista (las teorías como verdades absolutas), interpretativo (la construcción de la realidad en las subjetividades), crítico (la emancipación para la transformación social) y el paradigma emergente de la complejidad. Una vez hecho el abordaje teórico, se determina que, en términos de la investigación educativa, es necesario generar reflexión frente a tres elementos relevantes: los retos investigativos frente a las dinámicas cambiantes de las sociedades, las miradas a los problemas propios de la educación y la postura del investigador en razón a los ámbitos del conocimiento desde los cuales parte para entender el fenómeno de estudio.

Palabras clave: complejidad, epistemología, investigación educativa, paradigma.

Abstract

This academic article seeks to answer the questions: What are the theoretical configurations assumed from the research paradigms and what are the new challenges posed around them from educational research? To do so, it starts with a theoretical review of the concepts of *knowledge, epistemology* and *paradigm*. The paradigm concept is deepened since it serves as a framework for the understanding of the phenomena of reality and the identification of four paradigms is revealed: positivist (theories as absolute truths), interpretative (the construction of reality in subjectivities), critical (the emancipation for social transformation) and the emerging paradigm of complexity. Once the theoretical approach has been made, it is determined that, in terms of educational research, it is necessary to generate reflection on three relevant elements: the research challenges in the face of the changing dynamics of societies, looks at the problems of education, and the position of the researcher in terms of the areas of knowledge from which they are supported in order to understand the phenomenon of study.

Keywords: complexity, epistemology, educational research, paradigm.



Resumo

Este artigo acadêmico busca responder à questão: quais configurações teóricas são assumidas a partir dos paradigmas de pesquisa e que novos desafios surgem em torno deles a partir da pesquisa educacional? Para tanto, partimos da revisão teórica dos conceitos de conhecimento, epistemologia e paradigma. Em particular, o conceito de paradigma é aprofundado na medida em que serve de arcabouço para a compreensão dos fenômenos da realidade e são identificadas quatro variantes: positivista (teorias como verdades absolutas), interpretativa (a construção da realidade nas subjetividades), crítica (emancipação para a transformação social) e o paradigma emergente da complexidade. Feita a abordagem teórica, determina-se que, em termos de pesquisa educacional, é necessário gerar reflexão sobre três elementos relevantes: os desafios da pesquisa diante das dinâmicas mutantes das sociedades, as visões sobre os problemas da educação e a posição do pesquisador em relação às áreas do conhecimento a partir das quais passa a compreender o fenômeno de estudo.

Palavras-chave: complexidade, epistemologia, pesquisa educacional, paradigma.

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Contextualization

Raising the aspects that, from the theoretical point of view, allow us to understand the concept of paradigm and its application in the broad field of educational research is an exercise that involves looking back at the debate on knowledge as the possibility of approaching the approach of realities and epistemology as a point of reflection for science on what is conceived as the process of knowing.

Indeed, the theme proposed for this article requires laying the foundations so that, from the theory, an understanding of the values, knowledge and methods that, from the scientific point of view, seek to respond to emerging problems in the different social and human dimensions. For this, the present report intends to address the bipartite question: what theoretical configurations are assumed from the research paradigms and what new challenges arise around them from educational research? These are questions that are proposed to be addressed from the review of the different authors, the conceptual notions and the schools of thought that have had a significant influence on raising possible definitions of the categories of knowledge, epistemology and paradigms to consolidate a generator referential corpus of reflections and multiple glances at this important issue.





The starting point: a theoretical approach to the notion of knowledge and epistemology

Pérez (cited in Martínez, 2013) affirms that knowledge is a way of approaching reality to reveal and improve it, seeking a look at knowledge, linked to the life of man and his relationships with the environment. This first definition is consolidated as a complementary approach to that proposed by Habermas (1973), who mentions that the knowledge produced by individuals or groups is immersed in everyday life and is derived from their natural needs configured in historical and social settings, a perspective that provides the basis for assuming knowledge as the result of the evolution of multiple factors that become more complex in interaction and multicausality.

In this way, knowing is assumed as a process that, as stated by Martínez and Ríos (2006), falls on each individual, to the extent that each one becomes aware of their realities and, through this, generates a set of representations supported by what for him is truthfulness. Thus, truth becomes a cluster of approaches to reality that subjects undertake, and whose act depends on various biological, cultural and social factors, among others, that interact to configure the world of life (Habermas, 1985, cited in Hoyos, 1986).

Likewise, Martínez and Ríos (2006) point out the coexistence of four fundamental elements in the construction of knowledge: the subject who knows, the object of knowledge, the operation of knowing and the result obtained from said process. It is an approach to knowing derived from the permanent interaction of various factors that, in an articulated way, allow access to reality, signify it and give it meaning. In the words of Skolimowski (2016), this definition of knowing is linked to various ways of constructing the world, ways that involve apprehending, contemplating and capturing the universe from the dimensions of the spiral of understanding.

For these authors, depending on the relationship established between the aforementioned elements, a non-scientific knowledge (based on intuition and sensitive capture) and a scientific understanding (which involves elements in relation to the contents of science can be reached and his method).

From this perspective, scientific knowledge provides a specific framework to the notion of paradigm, since it establishes assumptions of a methodological, ontological and epistemic order that are endorsed and accepted by a community of scientists.





The Paradigm and its typologies: elements of analysis

In his work The Structure of Scientific Revolutions, Kuhn (1962) defines paradigm as "a set of interrelated assumptions regarding the social world that provides a philosophical framework for the organized study of this world" (p. 82). This perspective places the paradigm as a structure of a conceptual nature, based on beliefs and theoretical and methodological assumptions, which, as the author affirms, guides a certain scientific community within its worldview about the world, which strengthens the values and knowledge that they share as a collective (Marín, 2007).

The worldview of the world proposed by Kuhn (1962) is taken up by Patton (1978, cited in Medina, 2001). Following this last theorist, a paradigm is "a general perspective, a way of breaking down the complexity of the real world" (p. 81). In addition, according to this same source, the paradigms highlight the relevant, legitimate and reasonable aspects. Undoubtedly, these approaches have laid the foundations to understand how a paradigm influences the conception of the world and the way in which emerging problems are addressed. Hence, according to Marín (2007), the paradigm is crucial from an applicative point of view, when determining the ways of conceiving the world, which is reflected in the formulation of laws, languages and assessments. In this way, for this thinker, the paradigm represents an accumulation of knowledge that adheres to the understanding of certain phenomena and allows them to solve their anomalies, and for the scientific communities it represents both beliefs and techniques and values that allow them to address problems and pose your solutions.

Within this conceptual framework, Morín (cited in Marín, 2007) reflects on the fundamental concepts or governing categories and the logical relationships of attraction and repulsion between these concepts and these categories that imprint semantic and ideological stamps to give meaning to the ways of being. , act and think of the communities that adhere to a specific paradigm.

The foregoing is reaffirmed in what was expressed by Alvarado and García (2008) when they argue that paradigms are consolidated as patterns or models that collect the beliefs, rules, assumptions and procedures on which researchers are disposed to do science. In this regard, Lukas and Santiago (2009) emphasize that a paradigm is not a personal position, but something shared and legitimized by a scientific community.





Thus, the paradigm is confirmed as a conceptual structure that, as supported by Najmanovich (October 19, 1991), allows the development of research in certain areas based on entities that support them and that, through different techniques, seek to seek solutions to certain problems. Likewise, Marín (2007) points out, these entities are based on logical and ideological operations that provide an understandable and coherent framework to address reality and generate new knowledge. In short, it is possible to affirm that paradigms serve as a framework for understanding the phenomena of reality; provide a guide to address issues and problems; They provide, within a framework of criteria, the appropriate techniques and coherent epistemology to address emerging situations (Medina, 2001).

In other words, the paradigm provides the researcher with the theory and methodological references to access the phenomenon under study and, as indicated by Vasilachis (2006), provides a philosophical and research system to understand the issues of the research process. These last statements show how, based on the paradigm from which the researcher is located, different methods, principles and instruments are applied during the research work, which gives qualities and singularities of its own to each of the approaches (Ricoy, 2006).

Finally, as key aspects to understand its scope in the scenario of the construction of knowledge and in the investigative approach in education, it is essential to mention the clearly defined characteristics with which Ricoy (2006) and Marín (2007) cover a paradigm. Next, paraphrasing the aforementioned authors, these characteristics are listed:

- Its impossibility of invalidation, falsification or destruction, since the paradigm is subjected to a loss of validity, but not to alternatives where they are classified as true or false. His philosophical approaches, his conceptions and the techniques to address the problems are transformed as revolutions are generated that, in the manner of Kuhn (1962), imply new challenges to rethink reality from the position of the scientific disciplines.
- It reaffirms itself in terms of its exclusivity, recognizing only its own beliefs, methods and values, without the possibility of accepting other notions.
- It is consolidated on a philosophical and research system (Vasilachis, 2006) that provides an order in scientific understanding, placing epistemological assumptions from which reality is known and its problems are addressed.





Derived from these conceptualizations about the category of paradigm, the question that assists us in the framework of this reflection is how many paradigms we could talk about. It is a discussion on which the specialized literature has not achieved unanimity: to such a degree that some experts refer to two paradigms, others speak of three, and some even speak of the evolution of the ecological paradigm, also called a holistic view of the world. Taking into account the above, and with the purpose of continuing the academic discussion on the subject, below we present four paradigms that are present in the educational research scenario.

The positivist paradigm. Theories as absolute truths

This paradigm is located within the positivist theory; raises the possibility of reaching absolute truths to the extent that problems are addressed and a significant distance is established between the researcher and the object of study. From the epistemological point of view, this paradigm provides a distinction between the researcher as a neutral subject and the reality addressed that is assumed to be alien to the influences of the scientific subject.

Within this conception, Flores (2004) analyzes how, from positivism, an ontological position is chosen that positions reality within the domain of natural laws and mechanisms. "Knowledge of these laws and mechanisms is conventionally summarized in the form of time and context-independent generalizations. Some of these generalizations take the form of cause-effect laws "(Flores, 2004, p. 4). Because of this, the physical and natural sciences and, in recent decades, the social and human sciences have adopted this paradigm.

Usher and Bryant (1992, cited in Ricoy, 2006) establish some basic assumptions of this positivist perspective that are summarized below:

- The depersonalization of individuals, considering the existence of a real world outside of them and a knowledge of that world based on empirical methods and procedures.
- The possibility of knowing reality through observable phenomena, assuming knowledge as something objective and capable of measurement, considering the production of knowledge far from value commitments, an aspect that inspires the quantitative nature of knowledge insofar as it is sought by the scope of a verifiable knowledge and with the possibility of being compared and replicable.



In addition to these characteristics, it is necessary to reaffirm that, from this paradigm, it starts from a hypothetical deductive system that reaffirms the relevance of making knowledge a systematic and measurable process within the framework of empirical control and causal analysis of phenomena, elements that, for research in education, imply the separation of the subjective notions of those who participate in the research exercise to provide principles and laws that, derived from methodological designs supported by the exact sciences, make plausible the understanding of the reality expressed in generalizations, explanations applicable in the universal sphere and analysis of variables within the cause-effect relationships, dependence-independence. From this paradigm, then, a perspective of knowledge is developed that subordinates the situational to the generalizable, and a hypothetical-deductive method is established in which the object studied is subjected to the methodological design.

In this regard, Martínez (2013) contributes to reflection the consideration of three moments for the development of this method within the positivist logic: the first has to do with the construction of the object of study, understanding the hypothetical formulation of the problem addressed; the second, related to the methodological design of the research, supported by the choice of data collection techniques that provide the possibilities of measurement, verification and comparability, including instruments for the standardization and verification of the data, and the third, the discussion and presentation of results that account for the scope of the measurement exercise.

The interpretive paradigm. The construction of reality in subjectivities

As Martínez (2013) affirms, the interpretive paradigm emerges as an alternative to the positivist paradigm. It takes as its starting point the idea of the difficulty to understand social reality from quantitative logics, which is why this paradigm is based on subjectivities and allows for the understanding of the world from the appropriation that individuals make of it.

From the interpretation as epistemological north, the situational analysis of the phenomenon is promoted. Once its particularities are understood, the development of methodologies that seek to understand and signify the relationships that are established in the singularity of the realities that converge in the different social settings is made possible, and thus provide multiple data, different perspectives and ways of giving it. meaning to the world of life (Habermas, 1985, cited in Hoyos, 1986). Hence, inherent to this paradigm, qualitative



research approaches are located from multi-method perspectives, which gives the researcher the option of using diverse information to provide possible answers to their study question. This paradigm finds its reason for being in dimensions, in the sense that it takes into account experiences for understanding the world and recognizes the influence of historical, cultural and social aspects in the configuration of subjectivities. Thus, knowledge can be assumed as the result of an exercise in human construction that does not end when approaching the answers and solutions to problems, but is transformed and opens up to other epistemological possibilities.

The interpretive logic gives place to two philosophical currents that base its method to access knowledge: hermeneutics and phenomenology. The first, according to Martínez and Ríos (2006), raises access to knowledge through the study of the discursive constructions of an author, a science, a culture, etc., in order to understand their meaning (meaning). And in that sense, hermeneutics maintains the non-existence of objective, transparent, or disinterested knowledge about the world (Martínez y Ríos, 2006, p. 32).

Hermeneutics relies on dialectics, on the construction of discourse for understanding and confrontation about world phenomena, on reflective judgment. Gadamer (1995) proposes it as a way of accessing and transforming knowledge. Here the recognition of the other allows the construction of knowledge and the capture of the sense that each one has of the reality that he internalizes and appropriates.

Phenomenology, for its part, emphasizes being and consciousness; does not rule out the sensory experience that results from experiences and interaction, from participation in and with the object of study. The researcher, therefore, acquires an important importance in his investigative exercise, since he validates his participation in the process and emphasizes his intuitions, his senses, his experiences and knowledge to interpret that reality that he perceives and that feeds on different perspectives .

Heidegger, Sartre and Husserl are its most recognized representatives. Education and the social and human sciences have used their contributions to understand how experiences contribute to shaping the ideological world and can become key to access knowledge and different types of knowledge.

Among the aforementioned philosophical currents, Ricoy (2006) highlights the main characteristics of the interpretive paradigm in the field of research: it specifies the relevance for it to deepen the investigative tasks, it rescues the possibilities of generating methodological designs arising from contextual scenarios that address to the participation of





those who are part of the process, it reaffirms dialogue and productive discussion to generate knowledge and understand the various problem situations.

These considerations make it possible to glimpse the ontological scope of interpretive logic, which, as we have said, is based on the reality assumed as the product of a social construction, in which the coexistence of various perspectives and the plurality of articulated visions is admitted. in communication and interpretation within the natural environments from which phenomena emerge.

The critical paradigm. Emancipation for social transformation

The critical paradigm is based on the critical theory of knowledge that positions reflection and social emancipation as a response to hegemonies and forms of domination, and makes conscience the means to achieve demands against social justice and the scope of the common good.

This paradigm, which is inspired by the contributions of theorists such as Marcuse, Giroux, Habermas and Freire, raises a view of science from a critical point of view and alludes to the importance of generating actions that contribute to the transformation and emancipation of the subject, with a view to breaking the bonds that prevent him from reflecting on his world and acting consciously in it.

From the critical-reflective position, the subjects recreate their realities and, as Ricoy (2006) expresses it, they can transform them in a creative way by allowing the convergence of criteria and by opening up holistic visions that provide meaning to the world of life. (Habermas, 1985, cited in Hoyos, 1986).

Investigative processes are seen as spaces for participation, social responsibility, and commitment to the needs and expectations of the communities that, based on the commitment to emancipatory transformation, are on the path to making decisions for the common good. In this journey, social practices are oriented on the basis of a theory that is internalized, reflected on and critically analyzed in order to put it in function of the changes that are needed, using communicative acts to do so.

At this point in the discussion, Habermas' contributions again gain relevance when analyzing how this two-way dialogue, collaboration and understanding, to which Freire (1980) alludes when he invites us to put into practice an education as a practice of freedom, is specified in the understanding of meanings that is achieved through participation. According to Alvarado and García (2008):





Habermas starts from the concept of communicative action because he believes that it is centrally constitutive of human society; For this reason, he tries, based on this concept, to reconstruct a philosophy of rationality. For this author reason is a discursive plot that articulates the actions of individuals (p. 5).

In this way, it is reaffirmed that through discourse it is possible to find forms of understanding that make the knowledge of realities viable and guide knowledge towards a more concrete emancipation and towards decision-making based on self-reflection and critical awareness. In the educational field, for their part, these notions involve assuming global and dialectical visions of the realities that converge in educational contexts, as well as accepting democratic and participatory forms at the time of building knowledge.

The emerging paradigm of complexity

Marín (2007) It starts from the idea that subjects construct knowledge around uncertainties and assume the truth as something partial that only allows immersion in a part of knowledge, which unbalances the radical positions in which knowing is framed in absolutisms, to summon a logic that includes inquiry in an abstract, dialogical and complex sense.

Coinciding with this position, Najmanovich (October 19, 1991) argues that the complexity paradigm is based on the general systems theory, initially developed by Bogdanov and later by Bertalanffy, which relies on a transdisciplinary point of view to advance in the understanding of what exists from the analysis of the phenomenon in its multiple relationships. Najmanovich (October 19, 1991) adds that the focus is on "structure, adaptation, and dynamic equilibrium, in order to understand how a given organization could be stabilized and maintained through continuous change" (p 2).

The foregoing is complemented with the concern to understand these changes and the different factors that affect these transformations, and gives way to emerging ways of assuming the concepts and the different components of reality.

Morín (cited in Najmanovich, October 19, 1991), as one of the prominent representatives within the complexity theory that this paradigm encompasses, proposes a comprehensive and articulated vision of the dimensions of cosmological and social bioanthropology, to address the understanding of changes from its permanent balances and imbalances, within a logic of





openness to the possibilities of transformation, and what this logic implies for those who take on the challenge of investigating in the conditions of a world in constant chaos.

The holistic or complexity paradigm establishes the knowledge of the world as an inseparable network of relationships, since it conceives the world as an integrated whole rather than as a discontinuous collection of parts, which, in general terms, affects the traditional concept of objectivity scientific. In this sense, Capra (1998) indicates that in the Cartesian scientific paradigm descriptions are considered objective, that is, independent of the human observer and the knowledge process. The new paradigm, affirms this author, implies that epistemology must be explicitly included in the description of natural phenomena.

Final notes

As evidenced in the development of this article, the contributions to the conceptualization of the paradigm are consolidated as fundamental approaches to understand the way in which scientific communities assume models that allow them to think about problems and seek solutions to them. In terms of educational research, once again, it implies calling for reflection on three relevant elements: the first, the research challenges in relation to the changing dynamics of societies; the second, the views of the problems of education, and the third, the position of the researcher due to the fields of knowledge from which he relies to understand the phenomenon of study.

Regarding the first aspect, it is possible to affirm that the permanent transformations of societies require researchers attitudes that allow them to assume critical-analytical positions to understand the complexities and dynamics of the world, approach the different realities from perspectives that make possible the explanation of the phenomena and propose ideas that lead to the articulation of the various theories, concepts, values and ontological notions to try to scientifically answer the questions that emerge, deepen and transform in the interaction with others and with the environment.

In this sense, from educational research, a call is made to extend the possibilities of inquiry and search in the alternatives that are offered within the paradigms. This is to address social and human problems within the framework of reliable, systematic, flexible and situated procedures, meaning them in areas of beliefs and knowledge that lead to academic discussions and broad debates in the face of realities, in an exercise of openness to the north. epistemologies that offer greater understanding and the possibility of greater intervention.





The problems of humanity, those that are known and that have not yet been overcome, such as hunger, poverty, social exclusion, inequality, conflicts, environmental pollution; those emerging as a product of cultural relations established in a world characterized by diversity, multiculturalism and difference; those that fluctuate in the transformations that the evolution of science and technology bring to our time; those who have put humanity in crisis such as the global pandemic generated by covid-19; All these problems, plus others that we still do not know about and that become with accelerated changes in society, demand deep reflections, new ways of doing research and other bets to transform knowledge within the daily investigative task, as well as to develop methods and strategies that allow the identification and resolution of problems and thus be able to respond to the vertiginous transformations of the current world.

Thus, the approach to the realities in the aforementioned investigative opening implies clarity for the researcher about the approach, tradition and perspective from which the subject of study will develop (that is, the paradigm in which it will be located to assume it conceptually and methodologically). The foregoing also supposes the adoption of a framework of firmly consolidated scientific knowledge and the establishment of criteria that, attending to a methodological rigor that provides reliability and reliability to the investigative exercise, take up the ethical, theoretical, contextual dimensions of social responsibility. and ethics that implies intervention in the educational field.

In relation to the second aspect, namely, looking at the problems of education, it remains a challenge to understand, deepen and seek alternatives to the emerging situations that arise in the world order: migratory flows, school dropouts, Displacement as a recurring phenomenon and difficulties in accessing education systems, among others, continue to be the task of the different actors that have to do with the educational field and should continue to be proposed as fundamental points within the public agendas.

In that sense, questioning oneself in the face of these realities is essential to understand educational problems in specific and general contexts, as well as identifying, from the various fields of knowledge represented in the research paradigms, the dialectical possibilities to approach the understanding of the phenomena in contextual plurality, and thus generate and strengthen scientific practices that transcend the reductionist approaches that have prevailed over education and place new bets that, directing the gazes towards interaction, the shared construction of knowledge and social transformations, can contribute to solutions to mitigate or overcome current educational problems.





The challenge of educational research is to think to transcend the emerging problems in education, to become a possibility to open paths towards reflection, understanding the facts, causes and the different phenomena that make up education, relying on beliefs, values and knowledge (paradigms) that make it possible to approach realities and contribute in a significant way to the consolidation of one of the many perspectives on problems that coexist in education.

For the researchers, as the third and last point in this article, the challenge continues to give meaning to the investigative practice to assume, from a self-critical position, the aspects that merit resignification or reinvention, understanding this task as a conscious exercise in the face of changes and needs of contemporary societies.

Finally, it is worth emphasizing pedagogical reflection as the articulating axis of the investigative activity and as the fundamental territory to assume the analysis of the problems of education, and seek to open discussions that, based on the contribution of the various paradigms, provide meaning and meaning to the fields of study and direct the search for new understandings and approaches to realities.





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