

KNOWLEDGE AND ITS CONSTRUCTION: A REFLECTION FROM A LUDO-SCIENTIFIC PERSPECTIVE



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ABSTRACT

This essay is a review and reflection on knowledge and its nature in the understanding of paradigms and epistemic models. It is based on historical and evolutionary research on the symbolic construction of the world from the interpretations that man makes of his reality and compiles critical and reflective views of the scientific evolution from the ways of investigating. In this sense, Education has managed to expand knowledge to unsuspected branches providing solutions and problems to the emerging dynamics of change, in this case validating for the purposes of reflective contributions, the importance of recognizing research as a playful activity motivated by enjoyment and of course, the impact of the concept of didactic transposition in doctoral studies to ensure not only the permanence in academic programs, but also to motivate a good relationship of the subjects with knowledge and its management from research. This path addresses the ontological, epistemological and methodological visions of paradigms (Ramos, 2015) and articulates the visions of epistemic models (Hurtado, 2000) from the genesis, circulation and appropriation of knowledge (Zambrano, 2013). With the paths prepared for research, it is possible to dream of a different way of doing science, a path guided by playfulness, where research is exciting, enjoyable, understandable and more accessible to all people, even breaking down age barriers.

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The ludo-scientific perspective intends to dynamize the didactic transposition and will have an influence on the control of school, university and doctoral dropouts, encouraging in turn a greater number of researches.

Keywords: Paradigm, epistemic models, knowledge, playful

INTRODUCTION

The nature of the world and the vastness of knowledge is so wide and obtuse that it certainly calls for the warmth of phenomena, of the different and enigmatic, from the particular to the general and from the sensible to the truth. It is possible to think that there is in essence, an ocean of phenomena that were considered inscrutable for a certain time, but that thanks to the advance of society, its thought, technology and vision of the world, it was possible to give clarity on the unknown, which ended up arousing a voracious spirit in man with respect to what surrounded him and his need to understand it. This is how the present text compiles critical and reflective views of the scientific evolution of the ways of researching, to land on an educational concept called didactic transposition. It is far from the intention of this text to conjecture an eclectic vision of the epistemic models that have taken place in the history of knowledge, but to compile in a systemic way the views that allow us to discover the elitist idea and praxis of knowledge about the evident need to know that is shared with all people, at different scales or levels, of course.

The topic that prompted the present lines, obeys to review the ways of conceiving and interpreting knowledge from abstract issues such as Plato's world of ideas, to the emerging paradigms that promote ruptures of the routes or approaches in research studies. On the other hand, it tries to analyze with retrospective and prospective readings of models and paradigms, which allow to have a more accessible vision of scientific research.

As a point of reference for the analysis, two real situations have been taken: the first, related to people and their role or functionality in knowledge, paying special attention not only to the scientific community, but also to the way in which this knowledge can reach more people in a more effective way through a clearer language. The second is related to doctoral studies as a means that invites reflection, deepening and clarifying those phenomena that are currently veiled and their context from the viewpoint of desertion. Both views respond to a possible symptomatology, if it could be called that way, since in the system of knowing, doing

and making knowledge (Mallart, 2001), converge those who do not know and prefer to keep it that way, as well as those who try to investigate (but give up because of the complexity of knowing with scientific relevance).

Thus, the document addresses in a concrete manner five blocks that detail a series of analyses from propositional visions. In the initial section, called Man and the world: meanings, perceptions and interpretations, an approach is made from two nuances, one of a man with a soul that transcends and the other from education as an act of survival, both aimed at how this constantly approaches the appropriation of the world and the development of knowledge. Subsequently, the second section discusses knowledge and its transit from the empirical to the systemic and paradigmatic, elements that approach the idea of models as strategies to respond to the paths of knowledge, which have been traversed by many characters and are currently represented in paradigms or epistemic models. As a third moment, a relational and necessary look at epistemic models and didactic transposition: barriers and dynamics of research is highlighted. On this analysis, an alternative view is structured, called Research as a playful activity, which aims to discuss the playful property of science as a strategic combination in the framework of bringing research within the reach of all. Finally, the fourth moment, welcomes all the analyses in the chapter Doctorate and desertion: alternative from the didactic transposition, to concatenate the multiplicities of knowledge from the pedagogical actors, especially from the student-teacher-knowledge relationship.

MAN AND THE WORLD: SENSES, PERCEPTIONS AND INTERPRETATIONS

Feeling part of the world is perhaps a natural sensation that rests in man as something within a whole. In this aspect, the essence of human existence emerges, which does not pretend to avoid what surrounds it, nor the questions that the environment instinctively generates as a result of its reasoning. The world, far from its tangible luminous offer, is a collection of shadows and lights on which the discovery is erected through exploration, questioning and the incessant search for answers.

Before examining the role of the senses in man's recognition of the reality of the world, it is appropriate to speak of the vision of knowledge. Plato proposed a great example in The Myth of the Cave, to the reason that those shadows and lights mentioned above, represented the locks and keys that there are with respect to knowing (Calva, 2013) and that just as the myth of Prometheus pointed out, fire is the knowledge to which man is expected to

take the risk of accessing. Suffice it now to say that it was the same author, who provided the basis of knowing from the concepts doxa and episteme (Naupas et al, 2014), currently recognized under parameters of objectivity and subjectivity. Over time, thought has evolved and especially the way knowledge is conceived and constructed, which has led to multiple ways of appreciating what is understood as reality (Martinez, 2011).

Realities can be various, objective, subjective, media and even nowadays virtual. In an approach from sociological theory most philosophers agree that truth is a mental interpretation of reality transmitted by the senses (Vidal, 2013). Which by means of mental representations explain the perceptible world generating knowledge (Guillen, 2018). That is, there are mental processes of interpretation that generate reality and mental representations of the world that generate knowledge. In that purpose, the senses provide information to man for the interpretation of his environment which generates a process of learning, unlearning and reinterpreting which allows him to build new perspectives of knowledge.

It should be clarified that not all the views from the senses in the discernment of reality obey the collective vision as a community, but are also based on the staff's personal views of their reality and it is a decision to transcend their reflections outside their world of ideas to realize broad visions of something that permeates other people, places, times or phenomena. Hence the disparity that exists in the value assigned to what is thought, debated or reflected from subjective premises. The ideas presented by Plato have been so valuable that they are still active as a part of research, since the observation of phenomena is fundamental for any investigative act. (Perhaps, it is ignored that the conventional or institutionalized ways of knowing are not the only way to access knowledge (analyze, understand or propose) and that while there is the experiential membrane of the senses in contact with the world and reality, it is possible to think of other paths possibly as winding as those that have traveled the paradigms of history, but that the latter have followed the same route of the first traveler: not to stop no matter what arises).

EDUCATION AS THE AXIS OF KNOWLEDGE

Talking about education brings us back to the Greek philosopher Plato, as the founder of the Academy. Plato considered that men were constituted by two worlds, an intelligible one called soul and a tangible one called body. He considered the soul to have the capacity to endow the body with wisdom and to give it access to the knowledge of truth. While the

body was considered the lodging place of passions, injustices and all negative acts. It is here where, through education, the soul was able to control the body and all those negative acts, endowing it with wisdom (Angel and Villa, 2012). Plato considered that the soul was eternal due to the principle of simplicity, where compound things tend to divide and disappear, while simple things are immortal and get there through purification. He also argued that the soul, being simple, was immortal and retained the knowledge, which was only enough to remind the subjects to make it effective again. Plato used myths when he did not find an answer that he could give through reason, but he gave them the function of dealing methodically with the essence of an object through reflection. (Angel and Villa, 2012, p. 19).

Cardoso (2014) has defended the mythological vision of Education and, of course, its teleological purpose from the conception that it fulfills a biological purpose such as avoiding the extinction of the human race. Not in vain can it be said that the great advances of society have been in pursuit of the improvement of living conditions, having many of them originating in the reflections from diverse educational environments.

While for Plato, in a very general way, the axis of education was to generate a man useful to society and for Cardoso, that of a man who seeks to preserve his existence. We cannot limit education to these two visions alone, since the human being is not only a body, a spirit or a multiplying agent of existence. The human being has the capacity to create, mold, plan and build not only his life, but the life of entire communities and all this thanks to the fact that he does not have to start from scratch his knowledge, but that through education a whole system has been created that has allowed the conservation and dissemination of this much sought after and longed for good.

KNOWLEDGE AND ITS TRANSIT FROM THE EMPIRICAL TO THE SYSTEMIC AND PARADIGMATIC

To go through the ideas about the senses, reality and truth that Plato proposed to us, to reach knowledge, is a sample of the way in which the necessary knowledge is deepened, interpreted and adapted to form a base on which to move. And it is by means of theories that allow us to clarify and unify concepts, that we gradually consolidate knowledge.

Due to the Roman conquest over the Greeks and all the cultural exchange that was generated, the Romans had contact with their philosophy and although at the beginning it

was forbidden to teach it, with time and through the Empire of Constantine a new role of the State would emerge which consisted in taking care of the souls that they saw as a source of knowledge. At the end of the Empire, Roman culture merged with the Christian tradition and the Judaic tradition, giving a religious conception to knowledge and in their eagerness to conquer, they managed to insert pragmatic reflection as part of their worldview and way of obtaining knowledge.

Knowledge continues its slow advance in history passing from scholasticism to the Renaissance, positivism, empiricism, rationalism, Kantian epistemology, dialectical materialism, pragmatic epistemology, relativism, constructivism, evolutionary epistemology, memetics, among many others, each of which seeks a solution to the phenomena of the context, which will very possibly open the way to new advances and new forms of research.

Epistemology is also in charge of validating knowledge, of studying not only the processes of scientific knowledge generation and its products, but also the definition of knowledge and its scientific subset (Guillen, 2018). It should be added that it uses certain epistemic models which refer to philosophical positions regarding knowledge, starting from what it is, what are the sources and how knowledge is validated. Each of those models has its preferences regarding the type of research and the mechanisms in how these are validated, although many more could be mentioned, it is necessary to recognize that there are some base models and others that are derivations of them, and that even though the derivations may be more popular than the bases themselves, it is necessary to start from the root that produced them. These are: Naturalism, idealism, materialism, anthropocentrism or humanism, realism (Ocana, 2015).

At this point it is necessary to remember that as the ways of validating knowledge emerged, conflicts also arose among the followers of research methods, since while for some they should be quantitative, for others the methods should be qualitative, it is here where Kuhn stamped his staff with what he called paradigms, defining them as “universally recognized scientific achievements that, for a certain time, provide models of problems and solutions to a scientific community” (Kuhn, 1971, p. 12). This allows him to resolve the controversy that existed between social and natural scientists, on the accepted scientific methods and on the nature of the problems. It was then the unification of criteria that implemented a “standard” that allowed the coexistence of research models, thus achieving through the word and the

definition made by Kuhn of the paradigms, that the epistemic models could be located within the epistemological paradigms. Thus, the scientific paradigm determines the social, cultural and epistemic relationships, delimits the observable aspects within a given context, and also specifies those elements that are ignored in an investigative process, on the other hand the epistemic model is considered as the instrument used to analyze, explain, interpret, understand, orient, direct and transform science (Ocana, 2015).

Scientific methods are changing as well as man, so the arrival of a new research paradigm will possibly be accepted among the scientific community if it is able to give better answers to some contradictions that have not been satisfactorily solved or have been incongruently solved (Barrera, 2010), thus giving rise to a new perception of reality, which Kuhn called “scientific revolution” and the acceptance of that new paradigm. One of the scientific limitations are precisely the followers of the paradigms that adopt the paradigm that best explains their theories as the only valid one and reject the others, thus delaying the progress of science. If we see paradigms as a way of interpreting reality and we could achieve the integration of several of them that complement each other, we would have a paradigm that could give explanations from more points of view, as in the case of the holistic paradigm proposed by Barrera (2010).

RESEARCH AS A PLAYFUL ACTIVITY

Following the review of the philosophical and validated ways of constructing knowledge, this section aims to discuss the role of playful behavior in this cognitive and possibly pragmatic construction. Basically because of the fact that in the cultural imaginary that underlies the scientific community on the banality of playfulness as a dimension of human development, it is assumed that its intervention in scenarios of epistemic construction of knowledge are irrelevant. Although it is evident that for the analysis proposed here, playfulness is transcendental not only in the history and evolution of science but also in the prospective that awaits it.

Based on historical references, traditionalist tendencies have been in charge of placing the physical or natural sciences as hegemonic in the scientific field.

While it can be said that social studies emerge as ruptures to analytical systems that have strongly influenced research studies in part of the twentieth and twenty-first century,

consolidating paradigmatic contributions in the conception of the world, the interactions between subjects and with their environment. It is therefore in the educational scenario where playful is given validity, that is to say, that it offers new ways of accessing reality and building knowledge from social phenomena such as education and others that derive from it.

RESEARCH: AN OBLIGATION, AN OPPORTUNITY OR A PLEASURE?

In the approach on the genesis of paradigms and epistemic models, it is important to mention that historically they converge in ontological, epistemological and methodological visions (Ramos, 2015), with special attention to qualitative and quantitative approaches, as well as their possible symbiosis (mixed) (Hernandez and Mendoza, 2018). Regarding paradigms, the diversity of concepts and typologies corresponds to the very nature of knowledge and its presence in natural or social facts. From the exclusive, separate, independent and atomized vision of the researcher in relation to the investigated, hypothetical-deductive (positivist), or the holistic, interrelational, interpretative, inductive (naturalist), dialectical intersubjectivity, change-oriented (socio-critical) conception and the correlational integration of knowledge from reflexivity (complexity) (Homo academicus, 2020). (Homo academicus, 2020).

If one questions the fact of the obligatory or non-obligatory nature of scientific practice in the subjects, one can consider the questions: is it an obligation? an opportunity? or a taste? Even for those who support the aforementioned hegemony of positivist or post-positivist paradigms, it cannot be ignored that such physical or natural laws would not be possible without the subjects, who at least contribute to their discovery, analysis and understanding. This is said from the systemic perception that embraces paradigms and epistemic models that try to separate the human condition from the findings or the process that leads to them.

Is a scientist doing research because he/she is obliged to do so? Was he/she formed as a scientist or scholar of a subject by imposition or by his/her own decision? It would be inappropriate to think that one arrives at such a point without conviction and voluntary decision on that path. For the purposes of the topic, it is important to clarify that playfulness is part of the human condition and is not something that can be renounced. Therefore, this paper, among its many nuances, defends the very fact that research is a playful but serious activity, of course. There are already some references denominated as serious leisure, where:

The foundation of the quest [...] is the desire to achieve deep self-realization. Self-realization encompasses the act and process of development to the maximum

capacity of each one, above all, the development of one's talent and way of being (Lazaro, 2008, p. 329).

It is therefore possible to think that the construction of knowledge starts from an autotelic interest assuming that they are actions that do not derive in economic interests and that people perform in order to clear their own doubts, solve their own deficiencies or deepen in something they are passionate about, among many other reasons, enjoying what they do, or on the contrary, it is assumed as an exoteric practice that are understood as experiences that are an instrument to achieve a goal that can be academic or educational (Cuenca, 2000) and in essence, a playful behavior that does not adhere its nature only to the forms played but validates other diverse expressions in which it intervenes in the enjoyment of the person that is normally associated with activities outside those historically understood as necessary for the construction of knowledge. But, if research is enjoyed and is a free choice that motivates the creative capacity, would it correspond to a playful behavior?

Given the impressions gathered holistically on postulates such as Huizinga (1998) and the cultural transmission from the playful or the instinctive but humanizing condition of play in men by Caillois (1986), it can be concluded that research can indeed be considered a playful activity.

However, the construction of knowledge or entering into the epistemological or ontological structures of knowledge has been deprived of that playful part, which makes it not always a pleasant or simple exercise. It is definitely a considerable challenge, but it is possible that there are less winding paths that allow us to approach knowledge without losing heart. That is why, as a closing of this paper, the desertion of doctoral studies will be addressed from the complexities of the contents and strategies, on which the inclusion of the educational concept of didactic transposition is proposed as a strategy to improve the perception of advanced studies and ensure the permanence of academic programs at that level. This issue is related to the journey made from models and paradigms as a support for the complexity of building knowledge.

DOCTORATE AND DESERTION: ALTERNATIVE FROM A DIDACTIC PERSPECTIVE

Several studies address the dropout of undergraduate and graduate university studies,

including the doctorate. Different studies assign responsibility to vocational, socio-economic, institutional, academic and psychological factors (Crespi, 2015; Hernandez, et al, 2014; Aguilar et al, 2012; Vries et al, 2011).

However, it is not indifferent to the fact that the doctoral level imprints on the student a deep level of demand that affects in a general and systemic way the condition of the person. For the interests of this paper, it will be analyzed from the notorious complexity of contents and methodologies, although it is not considered a determining factor in the bibliographic research, it is a priority to contribute new views that possibly influence the relationship that the student establishes with his postgraduate training program.

It is not a priority to belittle the theory of the complexity of scientific thought or the paradigm of Edgar Morin, only that it is important to envision new training strategies in the doctorate. In this sense, it is important to make it a more playful activity without losing relevance and seriousness. To this end, it is important to analyze the implications of didactic transposition as a concept of transit towards accessible knowledge.

DIDACTIC TRANSPOSITION: THE DESCENT OF THE TEACHER

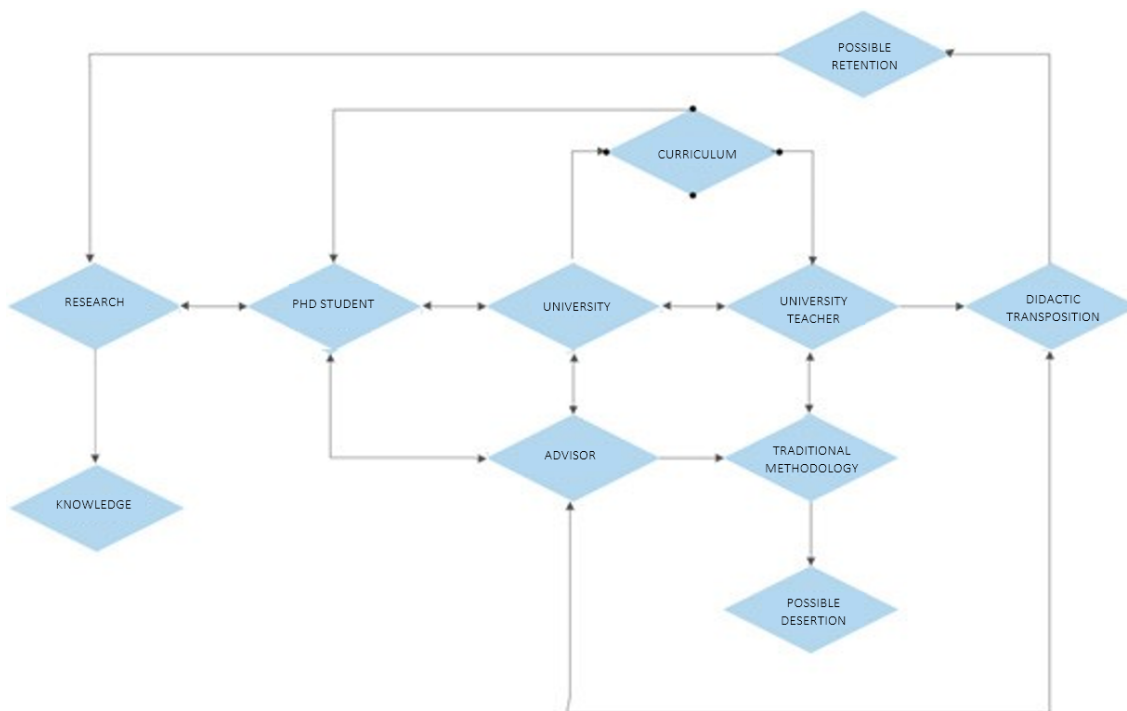
Access to knowledge is certainly restricted. Speaking of the relationship between teacher and student, learning is characterized by the relationship with knowledge (Zambrano, 2013). This interaction between student and teacher must configure spaces for access to knowledge from methodologies and contents that need to be approached and reflected upon in correspondence to the objectivity of the pedagogical link.

For this case, it is important to validate the concept of didactic transposition that operates in teachability as a practice that aims to create changes in individuals on what they have internalized from the representation of the world (Zambrano, 2013).

But basically, what is didactic transposition? It has been a concept of school application that is summarized as “*the passage from a scientific knowledge to a common knowledge*” (Zambrano, 2013, p. 55). This concept adheres to the thesis that supports the need to incorporate a humanization or popularization of knowledge, as a means to facilitate its access. The comment “doing the easy thing is the hard thing to do” applies well.

It is not a simple task, but it contains the intention of bringing research closer to more people. It is possible that in some way this complex relationship between the student and the advisor (Hernandez et al, 2014) or with the institutional structure (Crespi, 2015), may have a basis in the need to improve the transition from scientific knowledge to one in accordance with the student's capacity of understanding. The imperative work of autonomy in the learning of the doctoral student is not ruled out, but why is it common to detach the teaching work in the contents of the doctorate? Why assign to the autonomy and capacity of the student the totality of his or her progress? Although it is not registered in some antecedents, for this specific case, it is suspected that the structuralist environment of some postgraduate programs affects the possible student-advisor, student-contents, student-methodologies, student-doctoral thesis and, in short, student-advisor-university relationship (see Figure 1).

Figure 1. Influence relationships doctoral study



Source: own elaboration

In correspondence to the descent of the teacher, Zambrano explained that a conversion is intended from the axiological review applied by the guide on the other and rather to pass on the practice of knowledge and its transmission process (2013). For this topic, it is insisted on not separating totally the schooled environment from the other levels, since the didactic

thought abandons in its extension to the postgraduate studies. The purpose is not to restrict the autonomy of the subjects, but to revalidate the need for accompaniment based on pedagogical and didactic precepts.

In short, what is proposed is to school the doctorates in some way, because in complementarity with their nature, it would offer a detailed reality of learning at an advanced level but with diverse strategies that allow to enjoy postgraduate training and not saturate the physical or virtual shelves of research that are not significant to society. For those who wrote these lines, it is not motivation that research is for a few who can understand the technical language of academia and science, on the contrary, it is encouraging the need to popularize science through the playful as a proposal for the humanization of knowledge. In conclusion, these reflections invite as future lines, a possible ludo-scientific paradigm.

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