Teaching Professional Identity: Conjoining Complex Thinking and the Educational Field

Identidad profesional docente como religación entre el pensamiento complejo y el campo educativo

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Abstract

This article presents reflections on the results of an investigation carried out during 2015-2018. Its main concern was related with the alienation of the educative spectrum, of initial teacher training in Colombia (collegians) regarding social networking, subjective dynamics and the disposal of correlations, relations and demands of the social framework which teachers are instructed for. It centered its attention in unveiling complex components of such systems, from the constitution of curricular elements, dimensions and structures for its modernization and reconfiguration in Colombia. It was carried out using a mixed method analysis approach on a stratified sampling of 3 different populations, teachers in diverse stages and places of practice; it found new understandings in 3 primary niches. The first one, the discernment of the educational spectrum as a field that subsumes systems of education being fed by open social systems. The second one, reconfiguring the subjects and their position as the center of the being and doing of the related systems of the education field; assuming, at least, seven complex principles, generating a third niche that links education actions to school actions. It concludes with a modernization proposal, the Teacher Professional Identity and its attributes as an organizational category of the system, an action element that relates from complex thinking the findings and raises challenges to be considered by education institutions.

Keywords

Training, professional, teaching, identity, education, systems.

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Resumen

Este artículo presenta reflexiones sobre resultados encontrados en una investigación realizada en 2015-2018. Preocupada por el enajenamiento del espectro educativo, desde sistemas de formación inicial de profesores en Colombia (universitarios) respecto los tejidos sociales envolventes, dinámicas subjetivas, y el desechamiento de correlaciones, relacionamientos y demandas coligadas al entramado social para el que se forman los profesores, centró su atención en develar componentes complejos asociados a estos sistemas; desde el configurar elementos, dimensiones y estructuras curriculares para su modernización y reconfiguración, en Colombia. Gestionada con un método investigativo mixto sobre un muestreo estratificado de 3 poblaciones, profesores en distintos estados temporales de acción y lugar, encuentra resignificaciones asociadas a 3 nichos primarios. El primero, resignificar el espectro educativo en tanto campo que subsume sistemas educativos y es alimentado por sistemas sociales abiertos. El segundo, reconfigurar los sujetos y su posición, como centro del ser y hacer de los sistemas tratados en el campo educativo, en un hálito que asume, mínimamente, siete principios complejos, generando un tercer nicho que religa actos educativos con actos escolares. Concluye con una apuesta de modernización, la Identidad Profesional Docente y sus atributos como categoría organizacional del sistema, elemento actuativo que religa desde el pensamiento complejo los hallazgos encontrados y plantea desafíos a atender por parte de las instancias formativas.

Palabras clave

Formación, profesional, docencia, identidad, educación, sistemas.

Introduction

Understanding being a teacher, from a non-casual professional perspective, has put in the spotlight the need for studies that highlight how it has been, how it is and how it can be constructed. In the last few decades, there has been a lack of current frameworks that go beyond and link pedagogical, didactic and disciplinary studies, re-signifying themselves to the educational framework, beyond the school level. This phenomenon is the ground on which the study stands and which seeks to uncover resignifications, relationships, and configurations that must be the basis of being a teacher from and for a teacher professional development that responds to contemporary demands, from the perspective of initial training.

To this end, this text is composed by five sections. The first, introduction and phenomenon of study, the tensions and problems are described; giving way to the second, initial recognitions, in which the current state of the art in Colombia is presented in a global manner. This opens the third section, an exposition of the method used for the research, for the analysis and weaving of results. As a result of the tensions, data and associated theories, a fourth component is presented, in which the 3 niches formed by the results of the analysis are exhibited along with their corresponding reflections. This development is concretized in a fifth space that proposes the Teaching Professional Identity (IPD) as an organizational category found by the study and exhibits conclusions inscribed to

attributes of the IPD to finally analyses the main challenges found during the research.

The research[1] started from the recognition of the following tensions: 1) The Colombian education system (from pre-school to university) exemplifies exclusion and lack of social mobility. As stated by García et al. (2013), it is reproduced as a 'tilted playing field'. 2) There is a lack of understanding of education systems, which generates a "resident inequality principle". Assuming this, from a surrounding dimensional triad, it is proposed to devise strategies that respond to three founding tasks according to Rivero (1999): (a) Central tasks in overcoming growing poverty and achieving inclusive development; (b) modernizing education systems and practice; and (c) ensuring equal educational opportunities for children living in poverty. And 3) Muñoz (2009) states that it is known that "curricula have not been designed from the needs of the disadvantaged sectors, causing a deterioration in the momentum of learning, thus maintaining the dominance/subordination relationship in education systems" (p. 41).

On this basis, the study, in a particular way, recognized that education, from the initial teacher training systems, presents two vital needs that are highlighted by recognizing the premises, presented above, as true. Firstly, as Nicolescu (1996) and Morin and Delgado (2016) express, the training of the agents is alien to the social composition and their recovery occurs in assuming elements of exogenous fields and of social composition and fabric, that is to say, in looking for 'inter and transdisciplinary' formation, characteristic of the field of complexity. Secondly, the system of initial teacher training is part of university systems which, according to Didrikson (2004), require modernization in conjunction with social and cultural identity foundations. The same applies to the development of dimensions configured in curricular designs, in so far as the 'extended social dimension', the 'institutional dimension' and the aulic-didactic dimension' as set out by De Alba (1998). A cultural and political-educational proposal that responds to the social and environmental aspects of the curriculum as a meeting of subjectivities, as stated by De Alba (2015), refers to "nodal features of the identity of the curriculum and of the institutions with which it has ties of belonging, such as the State, the Nation, the Church, the social class, the neighborhood, the community, the ethnic group, etc." (p. 196). As a result of these two inadequacies, the study was framed in the complex thinking and it was proposed to reveal complex components inserted in the systems of initial teacher training in Colombia, to give account of challenges and nodes that allow to reconfigure them. Because the problem makes invisible the sense and function of the educational field and its transforming role of complex realities in a social setting.

Initial recognition

From the existence of the world, education takes place. Understood, according to León (2007) as a revelation of evolutionary learning constants that take shape in and through the relational acts between subjects and collectives, is conceived from a need for cultural survival. Consequently, its occurrence transcends, by far, what is characterized as schooling. Even with this reality, in everyday life the tendency persists to denominate with a high degree of synonymy, education as a school. Therefore, teacher training is restricted to an understanding, in the collective imagination, which exclusively assumes it as teaching/learning acts, thus reducing educational acts to schooling acts.

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In this scenario, the investigations of León et al. (2013) allow us to glimpse trends that, although they assume a formal declaration of recognition and need for education, maintain fragmented curricular organizations that deal with an overt reduction and a disciplinary and knowledge formation weight to be transmitted at school, as they note when saying that 25 curricula studied are supported as follows: 39.07% of disciplinary training, 21.47% pedagogical training, 5.48% practical training and 5.4% research. A reality that is in line with the Ibero-American outlook, as shown in the studies of Gil (2015, 2016); García et al. (2013); Marcelo and Vaillant (2009), Tardif (2004), among others.

For the Colombian case, there is also a recognition of its historical behavior that has had two macro scenarios. The first of them: understanding being a teacher considering training as capabilities, from 1822 to 1960; the second: understanding the teachers as transformation (scope of professionalism), which comes from the 1960s to date. In short, Zambrano (cited in Gil, 2015) concurs with this by stating that "training as a capacity refers to acquired knowledge, while training as a transformation is the effect of that knowledge on our being as people" (p. 152).

Research method

The investigation was covered by a mixed method as proposed in Creswell & Plano (2011), so that the following sections present the encounters between the sentences of the actors, from a quantitative-qualitative analysis, intertwined with theoretical constructs and their respective resignifications. For the elaboration of this mesh, the construction of instruments was used, according to the referential framework of the macro research, assuming three blocks, with their respective categories and subcategories (Chart 1).

Chart 1
Research blocks and categories

BLOCK	Category of analysis	Subcategories
1	Beliefs about the teacher's being and knowledge	What the teacher should be
		What a teacher shouldn't be
		What the teacher needs to know
		What the teacher doesn't needs to know
2	Effectiveness and efficiency of influence received by curriculum design in initial teacher training	Degree of influence of the curriculum design and initial training received for a good performance of the profession in various instances of accomplishment
		Perceptions of scope that one has from being a teacher and from curriculum design in initial training
		Demands on curricular designs. Needs from a retrospective view of what has been received vs. what has been experienced
3	Sense of being a teacher from sub-group notions and elaborated perceptions	Sense of the way I am
		Sense of how people see me
		Sense of how they are
	Self-image and evolution	Self-perception of change and current image regarding the time of experience

Source: Own elaboration

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The collection of data was done through a stratified random sampling that revealed the need for the application of instruments to 131 practicing teachers from 10 Certified Territorial Entities (CTE)[2] in Colombia, supported by the administrative linkage of public sectors. It was also applied to 77 teachers in training (TiT) from 5 universities located in 4 CTE. The total sample of the first application recognized two stratums of its own, by normative effect (those belonging to Decree 1278 and those belonging to Decree 2277). The model was run with a total population of 27180 practicing teachers. For the total of each stratum it was obtained: Decree 1278, 64 instruments to be applied and, Decree 2277, 67 instruments to be applied. For its part, variance analysis, cluster analysis and analysis from correlation factors and the triangulation of theories and information gathered through semi-structured interviews were used for the analysis of the data.

Results and discussion

Once the data collection and field work is done, the results of the research, recognition of the voices of the actors, have enabled three vital niches to be set up for the understanding of complex variables to be recovered and relinked in initial teacher training systems, as shown below.

Niche 1: Resignification of the educational spectrum as an educational field, a precursor domain

The study managed to understand education as a precursor domain of the teacher training system. The actors have managed to consolidate this clarity, since they understand that learning is not always linked to previously conceived, designed and planned teaching acts. This is what Morin (2011) proposes when he alludes to Rousseau in his speech in the *Emile*: "when the educator says referring to his pupil: «I want to teach him how to live». The formula is excessive, because one can only help someone to learn to live. To live one can only learns through one's own experiences (p. 135).

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Understanding with this that, although there is an important link between teaching and learning, their coexistence is relative to the individual and the particular situation, therefore, they are not bound, in exclusivity, as a principle of cause (teaching) and effect (learning). By highlighting this distinction, it is possible to make their existence contiguous and separate. Each, and both as a unit, are part and all within a system. For García (2006) a system "designates any organized set that has properties, as a whole, that are not the additive result from the properties of the constituent elements. The organization of the system is the set of relations between the elements, including the relations between the relations" (p. 181). The notion of a system is vital, as it overcomes the staticism of the components and figures their feeding from the relational and interactional of the parts, with which they are constituted nodes that resignify and are constituted as more than the union of parts.

A non-dichotomous relational principle manifests itself here, in which is revealed connection of diversity from experience since, according to Jiménez and Valle (2017), "all knowledge is based on a previous world of lived experiences, where what is lived is not reduced to the satisfaction of needs, nor to the inclusion of a symbolic order…" (p. 37). Thus, for León (2007) "education is a complex human and cultural process […] for which each particularity makes sense by its connection and interdependence with others and with the whole" (p. 596) which is part

of open systems³ associated with the notion of field. For Pupo (2014), this need is sustained because "the cultural, cosmic and constructivist sense of complex thinking is conspicuous by its absence" (p. 17)

This new relinkage, which is found by analyzing the voices of the protagonists in their daily dynamics, makes visible a new link between the very nature of complex thinking and the study of fields and systems. For Bourdieu and Wacquant (2005) "to think in terms of field is to think *relationally* (1982a, pp. 41-42). The relational mode (instead of the most closely "structuralist") of thinking, as Cassirer (1923) in *Substanzbegriff* und *Funktionsbegriff* demonstrated, is the hallmark of modern science" (p. 149). In the same way, it translates this by expressing the relational character -non-interactive or intersubjective- between agents. In other words, following Marx (the authors say), relations are independent of the individuality of consciences and wills. Then, the field idea is characterized, merely, according to its constituent systems, its relationships, its agents (and independent of them). Consequently, it is defined by its particularity, that is, by conditions that are peculiar to it alone and also by the relations that exist between the different positions of the latter.

As a result, as Gil (2016) aptly sums it up, the field is conceived as "A system of relationships that delimit a specific area of activity and knowledge, always dynamic and in permanent motion" (pp. 114-115) and is associated with the notion of *habitus* and its resignification from "trans-relational" efforts, according to Piaget and García (1982), achieving modifiability in the structuring of structures, which are themselves structuring. As exhibited by Bourdieu (1991) "Conditioning associated with a particular class of conditions of existence […] systems of durable and transferable arrangements, structured structures predisposed to function as structuring structures, i.e., as principles that generate and organize practices and representations" (p. 2) may pose a distance from the subject-object principle and its relationships, since it alludes to it from the beginning of domination in its development. In the research it is determined that this fracture is solvable and must be treated in the proposed resignification, because as Martínez (2017) states, it is the product of an associative alienation of the substantive vs. the explanatory of the whole, as shown below:

> We have pointed out that the concept of *habitus* is an attempt to break with classic dualities of social theory, such as objectivism-subjectivism, or sociological research, such as "quantitative-qualitative". In its attempt to overcome the dualism of objectivism-subjectivism, it seems that

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Bourdieu's project ended up following the side of objectivism, while the *habitus* is produced by the social position of the agent (p. 12).

In addition, the author responds to allegations of excessive objectivism and determinism in the field and *habitus*. Because it states that these are remedied, by understanding:

> As for the accusation of determinism, Swartz (1997, pp. 216-7) points out that we must bear in mind that the Bourdieu explanation model tells us, as we have already pointed out, that [(*habitus*)(capital)] + field = practice (Bourdieu 1991b, p. 99), so the behaviors produced by a habitus will also depend on the functioning of the field (pp. 8-9).

In short, the relationship built between the category habitus and the principle of complex thought is consistent in assuming that the action and understanding of the agent, field and practice, go beyond the understandings of particular situations or the sum of these in causal states of the intra plus inter, producer of the trans; Because in its deepest sense it has resignified each one of them and has forced to observe the field in the totality of its fabric and not in the particularity of the points of the loom, but in the relational aspect of the point with the whole and its connectivity with the other points.

With these foundations the resignification elaborated in the research allows to establish an understanding of educational field as that in which it is intended, as attractor of the action, the accompaniment of others in their learning experiences (learning being an experience in itself), causing a recursion that allows me to experience learning experiences in myself. It functions as a medullary tissue that feeds and permeates any system that configures its own and external knowledge, that seeks to generate, make more or less comprehensive, learning relationships, not knowledge reproduction (from analytical understanding) exclusively. In this field the educational system is assumed, as shown by Mockus (1995), "[…] as a system for the circulation of knowledge, as a great network that allows knowledge to circulate and reach the places where it causes change, which, while being local, it is still significant" (p. 11).

Niche 2: Repositioning the subject and complex principles in the educational field

The achievement of the exposition above, in niche 1, implies the acceptance and staging of seven principles of complex thought that compose its network. Without them, the attempt to develop the educational field

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is a futile effort. In this sense, the study finds that the composition of the educational field is given by linking different systems (school, educational, organizational, social, cultural, political and economic, among others) and their interaction in different orders, in other words, a systemic principle.

This systemic principle, the recovery of action in, for and from the trained subject, that is, from the actors linked to the experience to be a teacher. This fact plays with the dilution of the dichotomy between subject and object, that is, for Morin (2002), a principle of cognitive re-introduction that implies "returning the leading role to the one who had been excluded by a blind epistemological objectivism. We must reintroduce the role of the observer subject […]" (p. 32). By having an interconnectivity between relationships and components it is recognized that any fluctuation and/or disturbance of one of them acts and reacts on others and on itself generating new emergencies in the field, the principle of retroactivity. Similarly, Obando et al. (2018) state that this complex process subscribes to perception linked to epistemological action as "From the relationship created in the process of observation, the cognitive subject has to divest himself of his subjectivity in order to possess the qualities proper to the object" (p. 95).

This means that there are premises of autonomy that are on an equal footing with premises of interdependence and that are given in a loop of recursivity. Emitted and immersed in the previous interconnections, the educational is inscribed in particular and general cultural states in which, as León (2007) states, it is recognized that "Education makes it culture. Man is made and educated with man, as iron is sharpened with iron" (p. 597), therefore, self-correspondence is kept as a particularity of the components and systems associated there. For Morin (1999), this is to understand that "the whole is somehow included (engramed) in the part that is included in the whole. The complex organization of the whole (*holos*) requires the inscription (engram) of the whole (hologram) in each of its parts, which are nevertheless singular (p. 113), that is, a hologrammatic principle. A principle that also communicates with the notion of collective action, as noted by Simbaña et al. (2018), since this interdependence conceives:

> This set of common beliefs and feelings allows for the development of a collective action, one that commits the individual to act according to established norms, Durkheim recognizes the educational centers as collective actions, describes them as integration scenarios… (p. 91).

In addition, these statements understand that the educational as a field involves the recognition of action from notions of the self-eco-or-

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ganizational principle. In the words of Morin (1979), this one, interpreted from the *Auto* and *Oikos*, means that it is carried out on a complex organizational basis "both of opposition/distinction and of involvement/interaction, of otherness and unity" (p. 66). What Soto explained (1999) implies "that these notions cannot be thought of or treated in a totally independent way from one another" (p. 69). Finally, the complementarity required in the foregoing requires mobilization mechanisms that guarantee what has been built. Thus, for Morin (2002) a "complex association (complementary/concurrent/antagonistic) of jointly necessary instances for the existence and development of an organized phenomenon" is recognized (p. 31) which means, involvement in and of the dialogical principle.

These foundations allow us to establish that from the educational, as action, meaning, sense and complex phenomenal construction, as a field, the aforementioned principles must be associated with structures of knowledge that relate the parts and the whole in the completeness, and the characteristic differences between each subject and each collective, keeping a self-correspondent relationship, as conceived below.

Regarding the principles of feedback and recursive transformation (figure 1), we have:

Figure 1
Resignification from the principles of feedback and recursive transformation
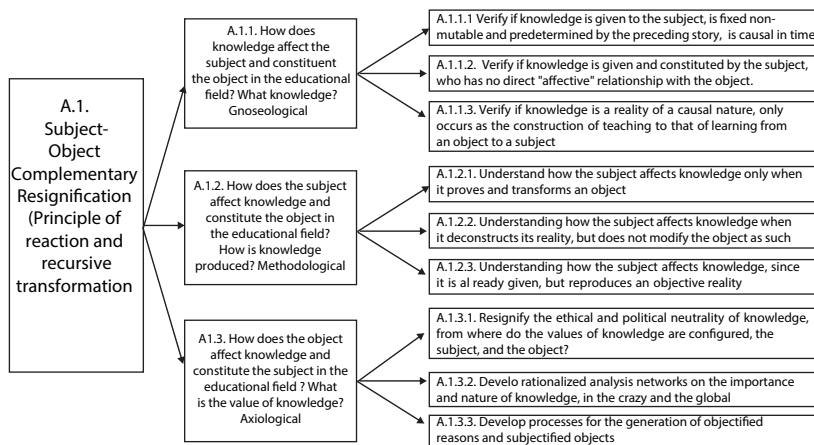
Source: Own elaboration

Given the evolution of the development of the subject and object in the historical evolution of the educational field, we have the following points that take force in the principle of cognitive and systemic reintroduction (figure 2).

Figure 2
Resignation from the principles of cognitive and systemic, evolutionary reintroduction
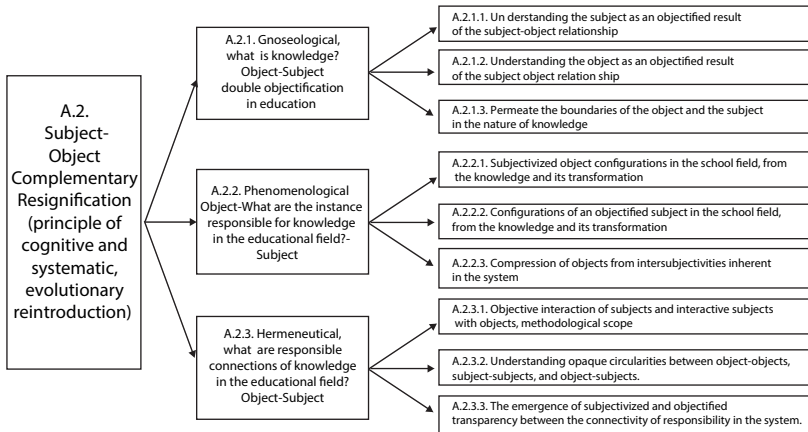
Source: Own elaboration

Thirdly, we have the processes belonging to the dialogical and the self-eco-organizational from the composition of the subject and the object, as an individual and culture, both the part and the whole, and their relationships for resignification (figure 3).

Figure 3
Resignification from the dialogical and the self-eco-organizational
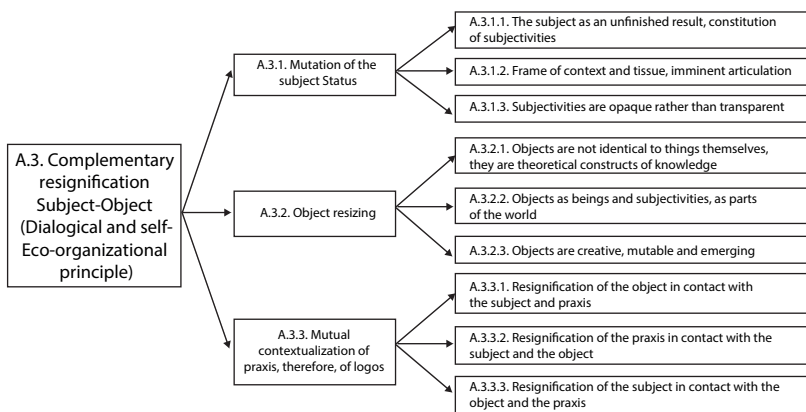
Source: Own elaboration

In sum, 7 principles of complexity as relational configurators that generate from and in the educational field that focus attention on the fact that the configurative engine of such process occurs in the subject's learning and actions (actions and structures) (Figure 4).

Figure 4
Resignification from the 7 principles of complex thought
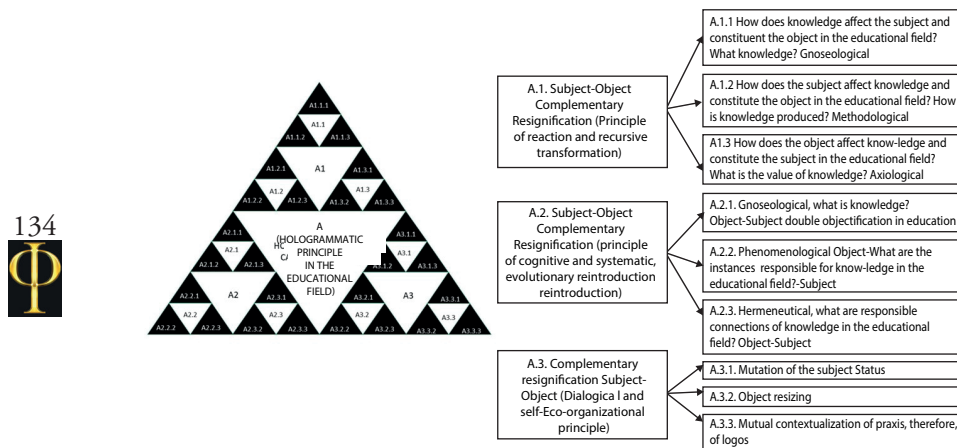
Source: Own elaboration

Niche 3: Relinkage of educational acts and schooling acts (the change of didactics)

These bases and configurations give way to the constitution and relinkage of educational and schooling acts. Educational acts and schooling acts are vehicles of manifestation in the field of education. These have intimate relationships, both form complex networks and assume a relational structure, that is, present convergences of meaning, but, in turn, are eminently different in scope, nature, interactions, intentions and occurrence, which results in divergences of meaning.

Schooling acts are conceived from the point of view of the institutionalization of learning spaces as a predisposed concept of transmission, that is, the result of previously designed teaching events (teaching/learning binomial). Consequently, they occur in the simulated, unnatural experience of the world and the arrangement of specific roles, limiting interaction to what Brown et al. (1989) calls as "artificial or substitute practices" between predetermined subjects; so its intention insists on iterating meanings that explain -recreate- culture, but do not build it up constitutively. Moreover, they are constituted from the construction of a

reigning rationality (whatever this may be) and prioritizes the decanting of the corresponding regulatory and disciplinary science. Posing, in some cases, its nature 'inter-relational' as Piaget and García (1982) point it out.

On the other hand, educational acts are based on the principle of learning as a notion of dynamic, changing and autonomous evolution, and therefore occur in the natural life of the world that does not have an obligatory assignment of roles. It has a reflexive scope of conscious awareness among the inhabitants of that world and, in the alienation of the natural state to reflect (your world in parentheses, the *epojé*) following Husserl (1907), therefore, its intention is to construct a social fabric that shapes culture. It is not found in the pathologies of reason, it is not subordinated to conceptions of regulatory and disciplinary science, but to the notion of knowledge as a synergy of knowledge constructed and deconstructed by subjects and collectives. In short, an educational act is one that provides experiences of potentialization of the learning of the other and of the self and, as Piaget and García (1982) show, evidences its 'trans-relational' nature.

The previously found relinkage locate the formative actions "to train teachers" from a principle of subjectivity of/in the subject and, from the discarding of a binary code, which corresponds to the de-structuring, resignification of reason, its rationalities and rationalizations (figure 5).

Understood, according to Morin (1979), as:

- Reason as "a method of founded knowledge… employed to solve problems raised to the spirit".
- Rationality as "the establishment of an adequacy between a logical coherence (descriptive, explanatory) and an empirical reality"
- Rationalization as "the construction of a coherent, totalizing vision of the universe from partial data, a partial vision, or a single principle" (p. 293).

These links, according to Costa (2006), set the understanding of "to know as it is presented by reflective analysis and scientific knowledge, a pre-technical knowledge that is presupposed by it and that will become evident through a different perspective that qualitatively separates traditional dualism" (p. 4). They also combine a logical didactic framework that drives the manifestation vehicles of the educational field and function as methodological devices that activate their reconfiguration. Consequently, didactics understand its codependency of the notion

of science, but it assumes it from constitutional practices that have been carried out by their subjects and collectives (the educational).

Figure 5
Relations and de-structuring between rationalizations
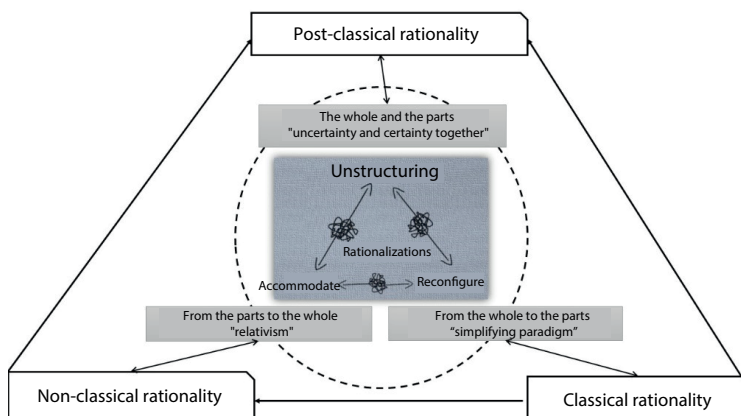
Source: Own elaboration

This should change the way in which didactics are understood as a system for studying teaching techniques and monitoring the learning of a science, to be recognized as a system that is concerned with revealing that the treatment of a particular science involves making visible the place from which it is treated and that this knowledge is a fundamental part of the teacher's knowledge. This includes considering components such as its historicity, its epistemic configuration, its social emergence, its regulatory capacity, its ideological infusion, its cultural phenomenology, its chronological disposition, its activity, its geographical implication or, the conjunction of different sources of treatments. Merleau-Ponty (1985) framed it in the perspective of being-in-the-world. Therefore, didactics assumes the search and treatment from the coexistence of the 'experience', as the pragmatism of being and the knowledge from the objective, as theory of being. That is, in a spectrum of a praxeological character.

In these spaces of emergence and resignification, praxeologies appear that, according to Chevallard (1999) and Bosch and Gascón (2004), are understood as professional activities linked to the tasks of being a teacher and his professional practice. In that place, ostensible or not, two levels are indissolubly conjugated. On the one hand, the level of practice, *praxis*, associated with the basic elements: tasks and techniques, referring to the set of procedures that give meaning to knowing how and how to

do. On the other hand, the reasoning about practice, *logos*, in which two other elements are circumscribed: technology and theory, referring to discursive constructions that justify and validate the technique.

Praxeologies reside in the spectrum of motion of differentiated processes, depending on the scope of study. For Lucas (2010) this means considering the existence of Point Praxeologies (PP) that imply oneness in the task and oneness in the presentation of facts. Local Praxeologies (LP) that mean the integration of various PP, composition of a thematic body. And, the regional praxeologies (RP) that manifest integration of diverse LP in an articulated manner.

Given this, it is necessary to consider the LP as the minimum basic unit of analysis for the configuration of a didactic organization, assuming two basic principles, as indicated by Bosch and Gascón (2004): The first that the indivisible unity is constituted in the encounter of codetermination between the didactic organization as a process (regional praxeology) and the disciplinary object as a product (local praxeology); the second, that "the phenomena of didactic transpositioning is at the heart of every didactic problem" (p. 20). In addition, the basic conditions for teacher training must be considered as those proposed by Ball and Cohen (1999): to learn to contextualize; to adapt; to continuously improve; to generate alternative teaching dynamics and; to understand various meanings of learning.

In addition, Vezub (2007) identifies the focus of teacher training from four generative issues, namely: "institutional organization and regulation of training; curricular aspects; training models and approaches; formators; teacher training teachers" (p.6). These developments demand an organization that encompasses praxeologies and that lives in indissoluble codetermination between object and its sense, thus emerging the didactic organization as institutionalized knowledge, through mutable systematizations, of acquired knowledge. Finally, since every schooling act is (must be) an educational act, if it recovers and accentuates its dynamism, however not every educational act is a schooling act, as has been shown. The resignification of the system and understanding of the field makes it necessary to unite them from the viewpoint of the formative models and associated perspectives and to involve designs that allow the mobilization between the different proposed states, together with the development of the praxeologies working in a global scheme (Figure 6).

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Figure 6
Relinkage between acts, perspectives and models for teacher training
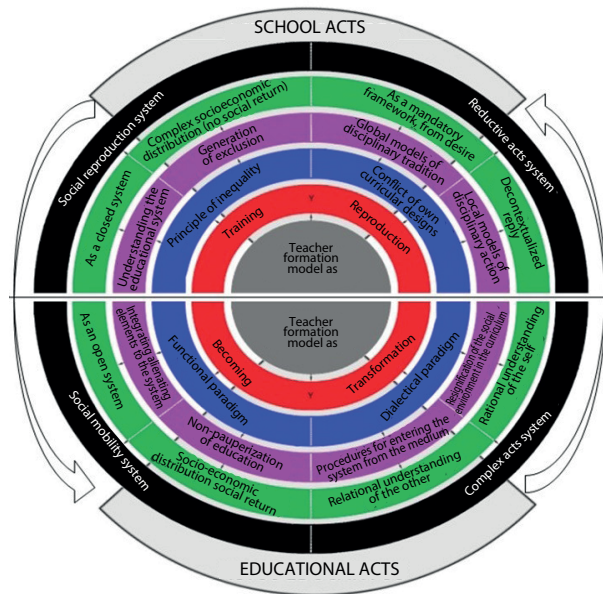
Source: Own elaboration

The commitment to modernization: Relinking from the action of the professional identity of teachers

In line with what was stated, the result of the relinkages and reflections found in the research, initial teacher training must be seen as a response to the creation of elementary conditions for being and learning in and from the action of the person being trained and of the training subject, and hence from his collective (community of practice). In this sense, identity emerges, particularly the Teachers Professional Identity of (TPI), as an organizational category of actions developed in the initial teacher training system and, therefore, in the field of education.

The configurations generated in the preceding reflections assume the lack of constant dialogue with the environment and social impact generated by its development. As the field has been constituted, primarily, from one of two perspectives of study of the social representations that are accepted, in turn, as a spectrum of movement of the model of initial teacher training.

In the first place, the social representation that assumes the training of teachers in the search for their actors and actions to break the

dependence on the socioeconomic results of a cohort of individuals with respect to that of their parents, characterization coined by Azevedo and Bouillon (2010). This is a model of social mobility that includes mutability; a relational, interactional and interdependent character; in the words of Morin (1994) a complex prospect that understands that the teacher is formed (acts) from uncertainty and certainty as complements.

Secondly, the social representation that suggests the training of teachers in order to subsume the actors/actions subject to cultural domination, from an asymmetric distribution of existing positions of power, as manifested by Bourdieu and Passeron (2003). What it is in itself, a model of social reproduction that implies a formation that considers reality as static; immutable; composed of dichotomies, therefore, its meaning is to transmit unique and exclusive predetermined models.

In response to the dichotomy generated by the models, a relinkage of the two forms of social representation is proposed, as shown in niche 3. In this sense, it is necessary to contemplate that the model of social mobility as presented by Romero et al. (2006) is understood as a system of "effective relationships that determine the particular ways of being, producing, interacting and projecting in the family, community, work and citizen" (p. 11), must be in harmonious coexistence with provisions specific to the school system and its resignifications, that is, with the model of social reproduction. This proposal generates the emergence of Professional Identity as an organizational category for the initial training of teachers in response to the social fabric.

The notion of identity, in a general way, has undergone a multiplicity of understandings and meanings as the social fabric is constituted and imposed in a given society and culture. In this regard, Altamirano (cited in Arias, 2017) identifies the use of the term, from the sociological point of view, at the end of the twentieth century; it also provides us with two references for its understanding consonant with the idea of sources of nature, being these "the essentialists, for whom identity comes from an identical shared nature, and the constructionists, who consider that identity is artificially constructed in social interaction" (p.15).

Even if this bifurcation exists, identity in the educational field has generally been placed in the first source, without any doubt or discussion. Consequently, there is no alternation design that allows the transition from the static (essentialist) state to the understanding of dynamic (constructionist) states, even more to a non-dichotomous configuration that is related to the two sources.

For such reasons it is common to speak of the discourse of identity of and in the teaching profession with the manifesto of tension of the replica offered in the compartment of essentialism. Even so, the works of Gysling (1992); Cattonar (2001); Lasky (2005); Vezub (2007) and; Marcelo y Vaillant (2009), among others, have successfully demonstrated the importance of this concept in the field of the teaching profession and how it is found within the framework of dynamic states that are co-constructed between the synergy of the subjects.

On this basis, it is important to consider new perspectives for these states. In this regard, Arias (2017) makes a brief but elaborated reference framework for this notion and shows dimensions of understanding the notion of identity, sufficiently separate and interdependent:

- The notion of identity, in general terms, could be understood as the self-referential image that everyone has of himself.
- Identity cannot be grasped as a fixed and predetermined nucleus that typifies the subjects, it is not a representation of the stable and imperishable self that transcends history and is invoked from a supposed coherence of personality; it is more and less.
- In the words of Levi-Strauss (quoted by Ortiz, 2004), "identity is a kind of virtual place, which is indispensable for us to refer to and explain a certain number of things, but which does not really have a real existence" (p. 77).
- For Ortiz identity is a symbolic construction that is made in relation to a referent, which can be a culture, a nation, a color, a gender or another collective
- Tugendhart (2001) describes the concept of identity as the orientation of life towards happiness, points out that everyone experiences his life as pleasant if one considers himself lucky
- Ricoeur (2006) confirms that "to say the identity of an individual or a community is to answer the question: who has done this action? who is its agent, its author?" (p.997).
- Identity is a social construction, that is, it is in the midst of the social dynamics that individuals construct the constitutive aspects of their being: "the meanings that the key words will have for me will first be the meanings that they have for us, that is, for me and my conversation partners" (Taylor, 1989, pp. 51-52; 15-18).

In line with the proposed declarations, we understand a path in which identity is resignified from a constructionist and essentialist understanding. Going further, it understands the notion of knowledge as

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a conscious experience. In this sense, the resident identity in the subject and in a collective is susceptible of modifiability and constant concretion, it is evidenced in the staging of actions, operations and actions carried out by the latter from the point of view and in the context of the group.

Consequently, the study succeeds in concluding a characterization of TPI in which it is understood as an expression of feeling of being that recognizes itself and is recognized by others, as a teacher; it is the breath that involves entering and staying in a particular community of practice, in which one is always trying to energize processes of accompanying learning (from the other and one's own) as the motor of his actions, from the intention of teaching (not as a transmission) but as a learning experience *per se.* It is an expression of the complexity inherent in the educational field in relations with the social fabrics that surround it.

It can be conceived from three nodular attractors: identity as an intra- and interpersonal network; identity conceived as a mutable phenomenon; and identity from the adjective action of the subject and the group (figure 7). Flourishing their relationships, not their mechanisms, that place the Professional Identity of the teacher as an organizational category of the system.

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Figure 7
Nodular attractors, TPI configuration
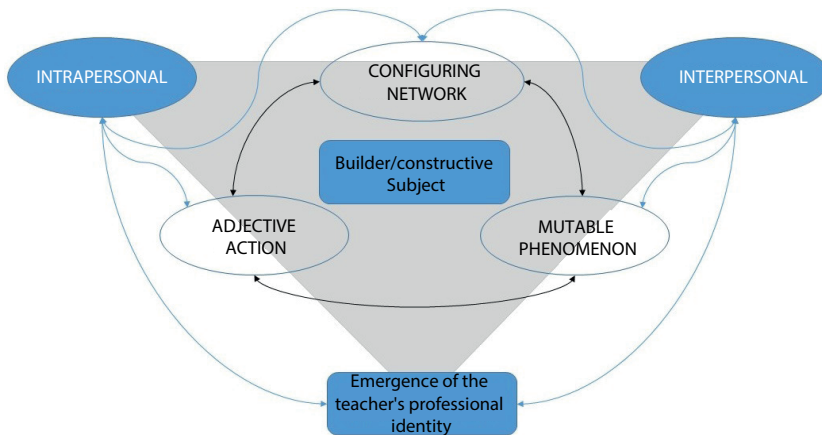
Source: Own elaboration

Thus, the professional identity of teachers is constituted as a mutable phenomenon, implying and evolutive development in which, from the life, particularly from the experience (Husserl), two basic questions

are configurated 'Who do I want to become?' along with 'Who am I right now?' This pair refers to elements such as self-efficacy, motivation, commitment and satisfaction in the work of teachers and is an important factor in becoming a good teacher. That is to say that identity is influenced by personal, social and cognitive aspects, in other words, it is housed in what Bourdieu (1977) considers as *habitus*-systems of personal and collective practices-.

Morin (2001) speaks of identity as a dual process, in which the subject must be taught to recognize himself and to allow him to recognize the diversity inherent in all that is human. Self-awareness and diversity of the other are essential for the subject to assume its status as a planetary citizen. In turn, Gee provides the concept of identity from the understanding of relational phenomenon, in which there is not a fixed attribute but a continuous development process that occurs in an intersubjective field, for which the premise of Habermas (1989) to consider that identity does not imply speaking "of something that we find there, but of something that is and, at the same time, our own project" (p.21) is accepted.

From these considerations, arguments have been found that lurk around considering the existence of identity in conjunction with the essential and the constructive, but, in addition, place the concept of core identity within levels of understanding of the subject, intersubjectivity and the collective. In this sense, Fernandez (2006), points out that identity "is a continuous process of constructing a sense of the self, according to a cultural attribute -or a related set of cultural attributes- that is given priority over the rest of the sources of meaning" (p. 102). As a consequence of the above, the professional identity of the teacher, for Sloan (2006), configures a complex "network of stories, knowledge, processes and rituals".

In this way, even if the singular of identity has been used, it must be considered that it expresses a multiplicity of trajectories and transformations as numerous as teachers exist; as configured by Huberman (1999) "teaching identities can be understood as a heterogeneous set of professional representations, and as a way of responding to differentiation or identification with other professional groups" (s.p).

Therefore, from a basic mathematical notion, classification, representing oneself as an actor of a collective automatically differs from others, in such a way that the professional identity of teachers also implies difference, as Costa argues (1993).

But it is these same facts of dynamic and complex understanding that, according to Téllez (cited in Ávalos, 2006), paradoxically allow us to see that professional identity is more difficult to forge in university

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institutions (especially at the secondary level) where training is shared by disciplinary faculties and educational faculties. This division generates fractures of the meaning of the task and the profession; therefore, its understanding is debated between the specialist of a discipline and the teacher of a specialty. In this line, we should be breaking down these barriers and understanding that disciplinary boundaries must be diluted, in the interests of a social sense and its needs, inviting us, as a university, to a paradigm shift that is concretized in the curriculum. Avoiding that our interest is centered, exclusively, in preparing specialists in the discipline rather than teachers, because this affects the vision of themselves that, then, the students assume (Ávalos, 2006).

With this aim in mind, the research succeeded in characterizing the attributes that give meaning to the Professional Identity of Teachers and that allow consolidating tools of curricular action, both in the desired and in the actuated, to address the problems associated with the educational field in this study. With this in mind, the following conclusions can be drawn with regard to this category:

Attributes of the teaching professional identity

The professional identity conceived as a relational phenomenon is configured from recursive attributes that retroact one another and constitute the actions of the teacher subject. In this sense, predominantly, it responds to four relational sources of its action, namely the source of temporal relationship of action; the source of self-image relationship; the source of self-consciousness and memory; and the source of social interaction and cultural dimension. Each of them, associated as nodular attractors that constitute the mobilization trajectories through which the formed subject and the forming subject must transit within the framework of the curricular design experienced in the initial teacher training system, are conceived as follows.

Source of temporary action relationship: De naturaleza estructural, esta fuente configura la influencia del tiempo para la evolución, mutación y constitución del sujeto profesor, desde lo propio de la experiencia y la progresión compleja que requiere para la constitución del ser profesor. It is the integrative and transversal medullary tissue of the others as it is spectrum of movement of the subject and its evolution. In a bounce effect, recursive and retroactively, it is expected to be a framework for the evolution of the community of practice in which the subject is inscribed.

Source of self-image relationship: Of an interactional nature between the subject and the collective (community of practice), this source is the process and result of intra-personal and interpersonal networks that concretize interactions with the otherness of subjects that constitute themselves in the collective. There is manifested how I see myself (what I am); how they see me (what I am from the other) and how I see (what I want to be from the perspective of the other). The three levels of understanding of self-image are related both as an example and as a counterexample, that is, the acceptance or rejection of attitudes external to the subject, which are assumed by the subject. In line with the temporal source of action, it is understood that there exists evolutionary mutability, therefore, only instants of expression of the being can be understood, not objectivization of the being.

Source of self-consciousness and memory relationship: Metacognitive in nature in three orders. First, the understanding of its action around a composition of educational field in association with a particular school system (Metacognition as an expression of the school process -the being a teacher-), that is, the identity from the self-regulatory notion of being embedded in a school process that seeks to know how to mediate in learning and how to generate production devices for the learning of others in recognition of various variables which retroact and self-eco-organize there. Second, identity from the understanding of its performance versus how he learns and how he manages mediations to provide experiences (of learning) to himself (metacognition as self-reflection about his mental processes-being a teacher of a discipline-). Finally, identity from the understanding of knowing knowledge, that is, the resignification of how I am a self-observer who mutates the object and the subject from my own historicity (metacognition as knowledge - being-).

This source assumes that only self-reflective exercise allows the temporal source of action to influence the constitution of the subject. It is the privileged instance of conscious awareness of actions, actions and attitudes that have been installed as operational invariants of the pedagogical practice of the teacher subject. It is the space of recreation of autobiographical development that involves recognition of the source of the relationship of self-image and its incubation in the subject. Implying recognition of being a teacher in both metacognition and knowledge of the acting self; of the self as an architect of an educational process; of the self that it knows and how it knows.

Source of social interaction and cultural dimension: Of a realization nature, this source comprises elements of systems exogenous to the ini-

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tial training system and provides the filters that interconnect elements of competencies, contents, designs and scenarios, diluting and converting them into social networks that inhabit the noosphere of development of the teaching subject. This source highlights the incubation of the professional identity of the teacher, as it allows versatility of his actions in one's own system and in alternate systems of feeding of the task. It superimposes components of exogenous processes and endogenous constituents of the profession to be a teacher, generating relationships in the triad of confidence, coherence and communicative cohesion and self-efficacy.

In unity, the attributes and the sources of relationship of the teaching professional identity, relinked from the composition of complex thought and the reconfiguration of niches 1, 2 and 3, are conceived as follows (figure 8).

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Figure 8
Constitutive attributes of the teaching professional identity
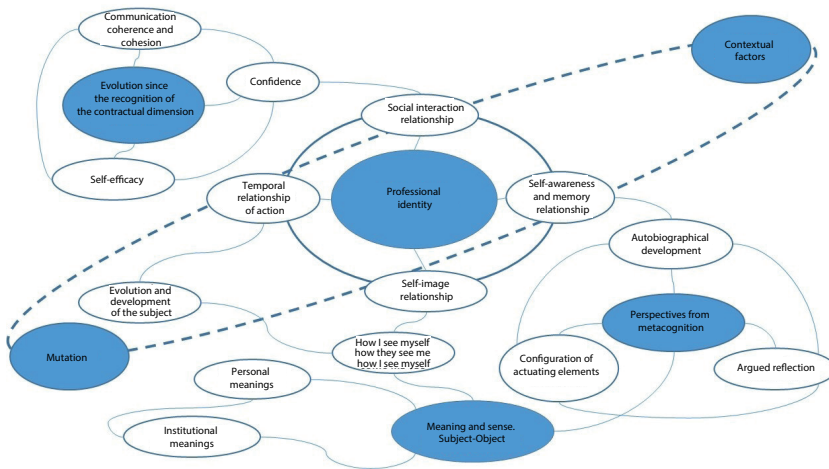
Source: Own elaboration

Some associated challenges

Two major challenges need to be addressed in order to achieve the results of the study. The first is a reconfiguration of the profile of teachers (trained and trainers) and their conception in the system of initial teacher training, as part of the educational field and the associated social fields. The second is the need to restructure and modernize the system's cu-

rricular designs in order to achieve this profile, based on the previously shown relinkages.

In the case of the first challenge, it is necessary to create profiles of the teacher (as well as of his trainers) as the subject who acts, consciously, from the intention of accompanying others in their learning experiences (learning being an experience in itself), which means understanding teaching as a complex recursion, which allows learning experiences in others and in me, which disturbs the system, generating new knowledge. That is, subjects that respond to current principles (relinkage between complex acts and principles) from three layers of action and organization, as shown below:

- A first layer, associated with founding the acting self, is to construct a subject that assumes itself as a teacher with precise edges "to be a teacher and/or to be a teacher of teachers".
- The second layer, associated with the constitution of oneself as an architect of education, is to recognize that one is a teacher with the burdens of the educational field, school systems and, of course, the social fabric in which one develops (school, university) and make us part of a community. Finally,
- A third layer, associated with the foundation of the intersubjective self, which means configuring oneself as a subject in recognition of the elements of knowledge (curricular organizers of training).

This proposal challenges the idea of TPI to weave elements that allow action from the three mentioned layers, layers that act as domains. According to Côté and Levine (2002) these three domains of identity constitution are assumed as: the plane of the self which refers, roughly, to the constitution of the personality of a subject; the personal plane, in which the interactions between the self and the reality are activated, product of the relationships between the self and the reaction of the others and; the social plane, which includes the characteristics and understandings that the subject elaborates in relation to the environment and its prescriptive perceptions.

Therefore, our TPI sources move in these planes, having the source of temporal action relationship and the source of self-image relationship move directly between the two stated planes, while the source of self-consciousness and memory and the relational source of social interaction reside, most strongly, between the last two planes (figure 9).

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Figure 9
Interaction planes and domains of understanding
the professional identity of the teacher
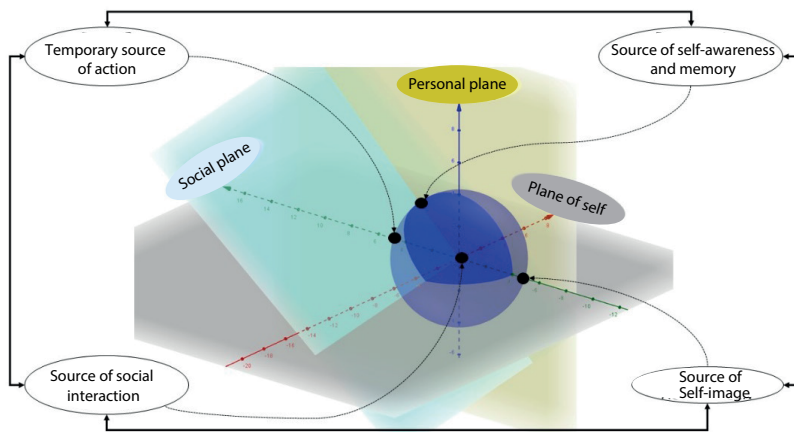
Source: Own elaboration

What can also be stated as the possibility of generating methodological devices that allow the reconfiguration of the actions in the system of initial teacher training from the movement through the dimensions associated with the constitution of identity of a subject.

For the second challenge, there is a need to reconfigure the curriculum organizers; the interaction schemes; the methodological arrangements for action; the scenarios of constitution and living and, of course, the organizational category of the initial teacher training system from the relinkages presented here, linked to the particularization of the social fabric to which it is confined. Thus, the results found in this text, pose a fundamental challenge to the understanding of the complexity of the teacher training system by associating it with links between the educational field and social fabrics; therefore, the design of a single global model is not feasible.

Notas

1   Doctoral Research: Architecture for the curriculum design of initial teacher training in mathematics. Incursion from the perspective of Complex Thought.
2   Modality of spatial, political, administrative and economic distribution within the framework of educational decentralization in Colombia, as provided for in the 1991 Political Constitution and in Law 60 of 1993 and Law 115 of 1994.

3   System which "remains in continuous incorporation and elimination of matter, constituting and demolishing components, without reaching, as long as the life lasts, a state of chemical and thermodynamic equilibrium, but remaining in a state called "steady" that differs from it." (Von Bertanfaly, 1968, p. 39).

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