

[Mathematics] Curriculum: a problematization of the dichotomy theory/practice from a Chocoan *territory*

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ABSTRACT – [Mathematics] Curriculum: a problematization of the dichotomy theory/practice from a Chocoan *territory*. In this paper we problematize the relationships between theory and practice (theory/practice) in the field of [mathematics] curriculum from and for a Colombian indigenous *territory*. Relationships that, in curricular terms, are a problem since they seem to be hierarchical. This paper is derived from a doctoral research in progress; a study in which we assume a *deconstructionist therapeutic* attitude for the conduct of academic research, inspired by the work of the philosophers Wittgenstein and Derrida; at the same time, we made some articulations with Foucauldian studies, in order to think about the [mathematics] curriculum from a post-structuralist perspective. Thus, first, we present the Chocoan *territory* where this doctoral research is being carried out. Later, we show some approaches between Wittgenstein's and Derrida's works to think – see in other ways – about research in the field of Mathematical Education, inspired by Antonio Miguel's investigations. Then, we establish some approaches with Foucault to discuss the relationships between theory/practice in the [mathematics] curricular field. Finally, we present some emergent reflections to think about the [mathematics] curriculum in the Educational Institution Katío Chamí (Chocó, Colombia), showing how, in the proposal of the *Tejido de Saberes*, typical of this community, the dyad theory/practice is not isolated; this dyad becomes a unity. Theory/practice are together and in harmony with nature.

Keywords: Wittgenstein. Deconstructionist Therapy. Foucauldian Perspective. Weaving of Knowledge. Indigenous Education.

RESUMEN – Currículo [de matemáticas]: una problematización de la dicotomía teoría/práctica desde un *territorio* chocoano. En este artículo problematizamos las relaciones entre teoría y práctica (teoría/práctica) en el campo del currículo [de matemáticas] desde y para un *territorio* indígena colombiano. Relaciones que, en términos curriculares, son vistas como un problema, toda vez que parecen ser jerárquicas. Este artículo es derivado de una investigación doctoral en curso; estudio en el que asumimos una actitud *terapéutico deconstruccionista* para la conducción de investigaciones académicas, inspirada en los trabajos de los filósofos Wittgenstein y Derrida; a su vez, realizamos algunas articulaciones con los estudios foucaultianos, con el fin de pensar el currículo

lo [de matemáticas] desde una perspectiva posestructuralista. Así, en primer lugar, presentamos el *territorio* chocoano donde se viene realizando esa investigación doctoral. Posteriormente, mostramos algunas articulaciones entre los trabajos de Wittgenstein y Derrida para pensar – ver de otras maneras – la investigación en el campo de la Educación Matemática, inspirados en las investigaciones de Antonio Miguel. Luego, establecemos algunas articulaciones con Foucault para discutir las relaciones entre teoría/práctica en el campo curricular [de matemáticas]. Finalmente, presentamos algunas reflexiones emergentes para pensarnos el currículo [de matemáticas] en la Institución Educativa Katío Chamí (Chocó, Colombia), mostrando cómo, en la propuesta del *Tejido de Saberes*, propio de esta comunidad, no se separa la diada teoría/práctica; esa diada se convierte en una, en unidad. Teoría/práctica juntas y en armonía con la naturaleza.

Palabras-clave: **Wittgenstein. Terapia Deconstruccionista. Perspectiva Foucaultiana. Tejido de Saberes. Educación indígena.**

Presentation

This paper¹ is based on doctoral research. The tesis's purpose is a *therapeutic deconstruction*² of the [mathematics]³ curriculum organized in a disciplinary perspective, from an *undisciplinary problematization* of social practices, with teachers from the Educational Institution Katío Chamí of the Sabaleta indigenous *resguardo*⁴ (Figure 1). This indigenous *resguardo* was established in 1979; it is located in the municipality El Carmen de Atrato (Chocó, Colombia), at the kilometer 74 of the road that connects Quibdó (Chocó, Colombia) with Medellín (Antioquia, Colombia).

Figure 1 – Educational Institution Katío Chamí



Photography: Óscar Charry (2018).

The purpose of this paper is to problematize the relationships between theory and practice (theory/practice) in the context of the [mathematics] curriculum from and for this indigenous *territory*. In curricular terms, these relationships are seen as a problem since they seem to maintain a vertical or even a dichotomous hierarchy. In this paper, we present the *territory* where the research mentioned above fieldwork

is being carried out. Then, we do some approaches between the works of the philosophers Ludwig Wittgenstein and Jacques Derrida to think about – seeing in other ways – the researches in the field of Mathematics Education. Then, we establish some approaches with the philosopher Michel Foucault to discuss the relations theory/practice in the [mathematics] curricular field. Finally, we present some reflections to consider the [mathematics] curriculum in the Educational Institution Katío Chamí.

Indigenous *territory* and [mathematics] curriculum

The Sabaleta indigenous “resguardo” was recognized in 2015, by the *Unidad para la Atención y Reparación Integral de Víctimas* (Unit for Attention and Integral Reparation of Victims)⁵, as a subject of collective reparation⁶. This recognition was granted due to the effects produced by the Colombian armed conflict, which resulted in forced disappearances of people, displacements to municipal capitals or cities, recruitment of minors, among other scourges, derived from the confrontations between different armed groups disputing this *territory*. According to Rodríguez and Durán (2008, p. 182), “there was consensus in the community that the forced displacement experienced in 1998 was one of the events that caused the most individual, family and collective damage”. Some of the damage caused to the community can be read below:

The spirit of the mother earth was lost, it went away because of the bombings, the fertility of the mother earth was lost, the earth is sterile. Despite the change of clothes for other ones that they learned to use during the displacement and loss of traditional clothing, they kept their culture alive (Rodríguez; Durán, 2008, p. 186).

According to the current governor⁷ of the Sabaleta community – also a teacher of the EI Katío Chamí – “with the violence of the 1990s and up to the year 2000, confidence [in other cultures] was lost” (Interview⁸, October 24, 2019). Although community members felt a bit the loss of some of their traditions due to forced displacement, the dream today, for them and the governor, “is for their children to know their history, their laws and their experiences” (idem) by education. Along these lines, the Community Education Project (PEC, 2015 - *Proyecto Educativo Comunitario*) of the EI Katío Chamí was designed “to strengthen the territory, with social well-being; from ancestral knowledge, starting with the family, for cultural and social rooting [...]” (p. 8).

In the same way, in 2018, the Fedeorewa⁹ proposed the “*Tejido de Saberes*” as a teaching plan for Embera education¹⁰. The “*Tejido de Saberes*” is considered a living document in permanent construction that seeks to put the ancestral knowledge of the indigenous communities into dialogue with school knowledge (Fedeorewa, 2019). According to this organization, this document should respond to the needs of the *territory* and the solution to the ‘community’s problems. A *territory* that “is the source from which the integrality of life and the diverse beings is originated, explained, and understood [...]” (Fedeorewa, 2019, p. 5).

Paradoxically, the PEC of this institution aims, at the same time, at “the formation of human beings with a profile based on basic, civic and specific competences that allow them to enter the world of work or higher education” (p. 20). The above, considering that the Educational Institution (EI) must also “promote entrepreneurial thinking, creativity, and innovation as factors that facilitate the entry of students into the social, economic and cultural processes [...] [for] their own development, for their region and our country” (Idem). This institution must also ensure training in skills that will enable students to “put knowledge into practice by solving problems of daily life, the environment and context [...]” (Ibid, p. 21). In summary, the PEC of this EI must attend, on the one hand, at the same time, to the “*Tejido de Saberes*” proposed by Fedeorewa, to the strengthening of the *territory* and of ancestral knowledge; and, on the other hand, to the training of its students for the entrance to higher education and the competitive labor world (outside the community).

In the previous scenario, according to research such as that developed by Tamayo (2012), it would seem that the teachers of this institution were in a *border situation* between two cultures; the Embera culture and the Western culture¹. This situation, according to this author, promotes some tensions of the communities in its curricular organization. These tensions have also been recognized by authors such as Monteiro (2005) and Jaramillo (2011) in the field of Mathematics Education. One of these tensions, according to these authors, emerges when the Colombian State promotes, directly or indirectly, on the one hand, processes of homogenization through the standardization of the curriculum and evaluation. And, on the other hand, the respect for diversity and interculturalism based on different educational and constitutional policies. Thus, the teachers of the EI Katío Chamí must attend two fronts: the processes of standardization of the curriculum and evaluation proposed by the Colombian Ministry of National Education (MEN- *Ministerio de Educación Nacional de Colombia*), and the construction of the “*Tejido de Saberes*” that responds to the needs of the *territory* proposed by the organization Fedeorewa.

This tension has been reinforcing the dichotomy theory/practice or, in other words, the separation between school knowledge and practices knowledge. The first one, recognized and legitimized by national and international curriculums and standardized national and international assessments. And the second one, recognized and legitimized within the communities and related to the social practices in which those communities are inserted. According to Santos (1998), there are as many forms of knowledge¹² as there are social practices that generate and legitimize them; “not recognizing these forms of knowledge implies delegitimizing the social practices that support them and, in this sense, fostering the social exclusion of those who promote them” (p. 431).

Thus, one of the consequences of the separation between theory/practice in school curriculum framework is the exclusion of the social practices of some communities from the school environment; social

practices that mobilize knowledge that gives meaning to the lives of the subjects who practice them. Another consequence of the separation between theory/practice, according to Mejía (2015), “is that the world is divided, losing the unity it had in many of the cosmogonies of our peoples. A significant example of this is how man-nature relations have been separated” (p. 118).

The authors Monteiro (2005), Monteiro and Mendes (2011), Jaramillo (2011), Tamayo (2012), Jaramillo and Tamayo (2012), and Higuaita (2014) agree in proposing a curricular organization based on social practices as an alternative to deal with the dichotomy theory/practice or school knowledge/practices knowledge. A curricular organization based on social practices, according to Monteiro and Mendes (2011, p. 45), promotes a debate “about the school organization itself in its times and spaces, where the center of that debate is the possibility of school organization from parameters different from the disciplinary one”.

According to Miguel (2016b), the colonizing model of modern schooling, promoting a curricular organization based on generic, abstract contents disconnected from social practices, sought, in Mathematics Education, this type of disciplinary organization. Thus, authors such as Miguel et al. (2010) propose to try to place themselves, as researchers, in an *undisciplinary* perspective that makes it possible to question the modern model of education. A model that

[...] has its roots in the encyclopedic tradition of the organization of compartmental and disciplinary knowledge and the positivist tradition of exclusively valuing specialized knowledge considered “scientific”. Such a model is based on the liberal-meritocratic ideology that conditions the social and economic democratization of a nation to the individual advancement of its citizens throughout the levels of schooling [...] (p. 131)¹³.

In a reflective meeting¹⁴ – developed in the framework of the fieldwork of this research –, together with the teachers of the EI Katío Chamí, we discussed the possibility of thinking about another way of organizing the curriculum that would move away from that encyclopedic and positivist tradition, different from the one based on a set of knowledge organized by each discipline. In this meeting, we proposed to think, for example, in the problematization of social practices, trying to cross the different knowledge that makes part of the different disciplines of the school curriculum. Inside this discussion, the elementary school math teacher questioned the disciplinization of school knowledge by asking the following questions: “What good is it if we are going to focus on a single discipline? What about the rest?”. Also, this teacher made it clear, from his perspective, that different knowledge circulates in social practices because, according to him, “[a social practice] is related to each area [...] [and] is going to open a way for us¹⁵ [to continue the construction of the “Tejido de Saberes”]”.

In these words of the mathematics teacher, we also identify some difficulties that arise when trying to organize the curriculum based

on social practices, within the framework of an organized disciplinary curriculum project. Thus, we consider it necessary to deconstruct the curriculum as a set of knowledge seen in the classic theory/practice dichotomy to replace it with another form that sees it “as a set of practices to be problematized” (Miguel, 2016b, p. 365). The *undisciplinary problematization* of these practices in the school, passing through different contexts and fields of human activity, even outside school practices, makes it possible to produce and mobilize different kinds of knowledge (Miguel, 2016b).

What Miguel (2016b; 2018) and Miguel et al. (2010; 2012) propose, from this perspective, is to replace the disciplinary regime – which has been responsible for organizing and mobilizing knowledge in the school, classifying knowledge into disciplines in the name of the promise of preparing people for work – by an *undisciplinary* regime. The latter moves away from that promise, seeking to ensure that the school does not just teach Western mathematics, but seeks to articulate different types of knowledge that will enable the social, economic, and political democratization of all *forms of life* (Miguel et al., 2012).

Miguel et al. (2012) assume this *undisciplinary problematization* as a *deconstructionist therapeutic* practice inspired mainly by Wittgenstein’s philosophical *therapy* (Wittgenstein, 1995; 2009) and Derrida’s deconstruction (Derrida, 1981; 2001). Using this problematization, according to Miguel et al. (2012), it is possible “to see the processes of cultural mobilization in the school in another way, no longer subordinated to the disciplinary regime” (p. 7).

Next, we present some approaches between the philosophers Ludwig Wittgenstein and Jacques Derrida to think about research in the field of Mathematics Education. From this perspective, called *deconstructionist therapy*, we seek to challenge the types of studies based on the theory/practice dichotomous model.

Wittgenstein and Derrida: approaches to think about academic research

Wittgensteinian philosophical therapy seeks to treat misunderstandings or conceptual confusion as if they were philosophical diseases caused by the improper use of language. In this regard, Wittgenstein (2009) says that “the philosopher treats a question; like an illness” (§255). Thus, he tries to show how philosophical problems require *therapy*, since “they arise because we are easily affected by language” (Miguel, 2015b, 220). According to the latter author, Wittgenstein did not practice *therapy* to defend philosophical theses. The *therapy* is assumed as an attitude, and not as a method in the classical academic sense in which this word is used.

This *therapeutic* attitude tries to abandon the desire to explain, because according to Wittgenstein (2007):

[...] the realization of an explanation is already defective, because one only has to organize correctly what one knows, and not add anything, and the satisfaction to which the explanation aspires comes by itself [...]. The explanation is, compared to the impression the description causes, too insecure. Every explanation is already a hypothesis (p. 194).

Also, by this *therapeutic* attitude we try to avoid the desire to theorize. In the words of Wittgenstein (2009): “It was correct that our considerations must not be scientific ones. [...] And we may not advance any kind of theory. There must not be anything hypothetical in our considerations. All explanation must disappear, and description alone must take its place” (§109). From this perspective, instead of looking for causal explanations, the idea is to situate oneself in the rugged terrain of social practices (Condé, 2004), to describe them as they are presented (Miguel, 2015b). Social practices that are understood as “a regulated set of effective intentional actions that simultaneously mobilize knowledge, purposes, desires, memories, affects, values, powers, etc., that are jointly performed by humans and other natural beings [...]” (Souza; Miguel, 2020, p. 171).

According to Miguel (2015b), Wittgenstein employs philosophical *therapy* in his struggle against metaphysics and the essentialisms of Western thought. There is no place for questions about the essence of things in this perspective, since these questions cause conceptual *confusion* that arises “when language is, as it were, idling, not when it is doing work” (Wittgenstein, 2009, §132). And, “[...] what we do is to bring words back from their metaphysical to their everyday use” to avoid such confusions (Ibid, §116). That is, the use of words in our everyday language determines their meaning (Condé, 2004), or, in Wittgenstein’s terms (2009): “the meaning of a word is its use in the language” (§43). The use of a word within a context is governed by a set of rules that constitute the grammar, thus, “the meanings arise from the use of words, mediated by rules, from our social practices, our habits, our form of life” (Condé, 2004, p. 52).

According to Condé (2004), this pragmatic aspect of the everyday use of words leads to the *therapeutic deconstruction* of the unique and totalizing language, to allow what Wittgenstein (2009) called *language-game*, understood as “the whole, consisting of language the activities into which it is woven” (§7). Wittgenstein uses different analogies that make it possible to see the language in different ways, as praxis “creative and creating practices of meaning” (Souza; Miguel, 2020, p. 172) –. Some of these examples are: “Giving orders, and acting on them. [...] – Reporting an event. [...] – Making up a story; and reading one. [...] – Acting in a play [...]” (Wittgenstein, 2009, §23).

Thus, practicing a *language-game*, in line with Miguel (2016a), is similar to participating in a performance, “we always practice language with our whole body, not just with the culturally regulated vibration of the sounds emitted by our vocal cords” (p. 372). In this context, we can

also see a social practice as a *language-game*, as “a way our body does something with the signs of a language-game guided by public rules shared and instituted by a particular form of life” (Miguel, 2018, p. 74).

Besides the questions about the essence of things, the *one-sided diet* also causes conceptual *confusions*, because as Wittgenstein (2009) suggests, in it “one nourishes one’s thinking with only one kind of example” (§593). By feeding essentialist and referential *pictures* about a certain concept or word, we end up being prisoners of them. In ‘Wittgenstein’s terms (2009): “A *picture* held us captive. And we couldn’t get outside it, for it lay in our language, and language seemed only to repeat it to us inexorably” (§115). Wittgensteinian philosophical *therapy* affects this *one-sided diet* by *describing* different uses of a concept or word in the practice of language, in order to show that the uses do not converge for a single meaning.

In short, philosophical *therapy* aims to “undo conceptual confusions by means of an overview of the uses of our language” (Souza; Miguel, 2020, p. 174). For Wittgenstein (2007, p. 200), the *overview* is fundamental, it marks “the way we see things, [as] a kind of ‘world view’ [...]”. Since,

A main source of our failure to understand is that we don’t have an *overview* of the use of our words. Our grammar is deficient in surveyability. A surveyable representation produces precisely that kind of understanding which consists in ‘seeing connections’. Hence the importance of finding and inventing *intermediate links* (Wittgenstein, 2009, §122).

We find some approaches between the philosophers Ludwig Wittgenstein and Jacques Derrida to think about the academic research, supported, also, by Miguel (2015a; 2015b; 2016a; 2016b; 2018). It is clear that between these two philosophers there are differences and disagreements – as presented by McDonald (2001) –, and therefore we could not bring them together in a common category, the most we could say about them, is that their works maintain among themselves, what Wittgenstein (1995; 2009) calls, *family resemblances*.

With the expression *family resemblance*, Wittgenstein (1995; 2009) makes transgressions to the essentialism and dogmatism of the Western philosophical tradition (Glock, 1997; Condé, 2004). According to Glock (1997), the notion – *family resemblance* – seeks to question the idea of the existence of an essence or something common to all *language-games*. In this sense, Wittgenstein (2009) says: “for if you look at them, you won’t see something that is common to *all*, but similarities, affinities, and a whole series of them at that. [...] [You will see] a complicated network of similarities overlapping and criss-crossing [...]” (§66). In order to clarify the expression *family resemblances*, Wittgenstein (2009) uses the analogy of the biological family to try to show that the relationships between different *language-games* behave similarly as the “resemblances between members of a family – build, features, color of eyes, gait, temperament [...]” (§67).

The struggle against the idea of a metaphysical essence was not the only intention of the philosopher in proposing the *family resemblances* (Condé, 2004). According to this author, Wittgenstein not only sought to highlight the critique regarding “equality, but [also] the understanding of ‘difference’ made possible by ‘one’s own similarity” (p. 56).

Wittgenstein understands family resemblances from the difference, by establishing this analogy between diverse characteristics within a language-game or between several games, [...] [Wittgenstein] is not looking for the identity, the similarity between one game and another, but for the difference that, despite its existence, still allows us to understand that activity as a language-game in which the uses of words establish the meanings. In other words, as a family resemblance makes analogies possible, it also allows for the perception of differences. And in this game of similarities and differences, we situate ourselves, establishing our rationality (Condé, 2004, p. 57). That rationality to which Wittgenstein refers is different from the “abstract, centralized and fundamentalist rationality that characterized modern thought” (Ibid, p. 29). On the contrary, what Wittgensteinian rationality would seek is precisely to abandon “the belief that reason is a ‘natural’ structure in order to conceive the rationality as an ‘invention’, a ‘construction” (Idem). Thus, Wittgensteinian rationality is constructed from social practices in different *forms of life*; it is non-totalizing holistic rationality, “a rationality without an ultimate foundation that is distributed in a multidirectional network of ‘family resemblances” (Condé, 2004, p. 35).

This rationality perspective is constructed from social practices, we also use the possibility of establishing analogies between *language-game*, and therefore the contingent character of language, to try to see different concepts or practices as *language-games* and to relate them using *family resemblances*, which are what determine, in this perspective, the criteria of our rationality. Using the analogy of the rope, proposed by Glock (1997), we can clarify a little more the use that we give to the notion of *family resemblances* in this document. According to this author, “what supports the concept, giving it its unity, is not a ‘single ‘yarn’ that runs through all the cases, but an overlapping of different fibers, as in a rope” (p. 325). With this, we seek to question the supposed existence of a ‘common thread’ that unites all the elements of a concept (Veiga-Neto; Lopes, 2007).

In this sense, as we said, authors like Miguel (2015a; 2015b; 2016a; 2016b; 2018) have been establishing a dialogue between the philosophers Ludwig Wittgenstein and Jacques Derrida to think about research in the field of Mathematics Education. Miguel (2016a) says that, both Wittgenstein’s and Derrida’s perspectives start “[...] from the post-epistemological¹⁶ assumption that, it is impossible the existence of knowledge and thought that are prior, transcendent or independent from language-game, in the case of Wittgenstein, or from writing, in the case of Derrida” (p. 376). For Miguel (2015a), in Derrida’s perspective,

[...] writing is not the phonic presence of meaning or reference, nor the graphic presence associated with an acoustic image. For [Derrida], the meaning is always socially instituted and, therefore, a construction. And since every construction is an architectural metaphor, every meaning establishes a structure, and it's not possible to have a meaning outside a structured conceptual system (p. 618).

The philosopher Jacques Derrida also undertakes a fight against modern Western thought, but in a different way of Ludwig Wittgenstein. One of the objectives in his work was the deconstruction of the binary relationships that support Western thought. For Derrida (1981), in a binary relationship, there is a hierarchical opposition, “a violent hierarchy. One of the two terms governs the other (axiologically, logically, etc.), or has the upper hand” (p. 41). In this hierarchical opposition, the first term is presented as a standard or usual. In contrast, the second would be a derivation of the first. It would be conceived concerning it, “as a complication, a denial, a manifestation or a separation from the first” (Culler, 1988, p. 9).

To deconstruct a hierarchical opposition is to try to show that it is a construction, and therefore that it is neither natural nor inevitable (Culler, 1984). To this end, Derrida (1981) places himself strategically within the system, trying to find the fissures and gaps of this “metaphysical building”, trying “not to ‘demolish’ the old structures, but to ‘erode’ the meanings that have their source in the logos or in a reason inherited from it” (Santiago Guervós, 1995, p. 8). According to Derrida (1981), “to deconstruct the opposition, first of all, is to overturn the hierarchy at a given moment” (p. 41). However, Derrida’s strategy would not end there, since we would be facing a new hierarchy; what is also sought is the re-inscription of these concepts in a new chain (Santiago Guervós, 1995).

In the words of Derrida (1981), the aim is “to transform concepts, to displace them, to turn them against their presuppositions, to reinscribe them in other chains, and little by little to modify the terrain of our work and thereby produce new configurations” (p. 24). Derridean *deconstruction* proceeds by means of a double gesture, one of which consists of reversing the hierarchy, since “to overlook this phase of overturning is to forget the conflictual and subordinating structure of opposition” (Ibid, p. 41), and, the other, seeks a transgression, or a re-inscription of the concepts of the opposition in other chains (Santiago Guervós, 1995).

Inspired by Wittgensteinian philosophical *therapy* and Derridean *deconstruction*, Miguel (2015a; 2015b; 2016a; 2016b; 2018) proposes the *deconstructionist therapy* as a post-structuralist attitude of academic research in Mathematics Education, which seeks to avoid “methodical scientific, empirical and/or verificationist attitudes” (Miguel, 2015b, 206). By this attitude, which is also ethical and political, we seek to deconstruct the differences established by “anti-democratic policies that promote and create economic, political, social and cultural inequali-

ties between nations and within nations” (Miguel, 2016b, P. 357); differences that arise from notions of social class, race, gender, among others. Some Colombian authors who have been practicing this *deconstructionist therapy* attitude in their studies are Tamayo (2017), Quiceno and Montoya (2020), and Charry and Jaramillo (2020).

Approaches with the Foucauldian perspective to discuss theory/practice relationships in the [mathematics] curriculum field

In the field of academic research, from a Foucauldian perspective, misunderstandings of the dichotomous relations between theory/practice often lead to the erroneous idea that research problems would be lying around, loose in the world, waiting for some theory to be solved (Veiga-Neto, 2007). This theory/practice dichotomy, in curricular terms, is seen as a problem, since the polarization between its terms is still in place, as we saw in the discussions developed in the first part of this paper.

For example, we saw that the discourse of competencies, understood in general terms as know-how in context (MEN, 2006), also highlights this problem of the dichotomous theory/practice. This is because the school promotes a supposed dialogue with other *forms of life*, as if life in the school could be adjusted to the different *forms of life* developed beyond the walls that enclose it (Miguel, 2018). According to this author, paradoxically, that discourse reinstalls the dichotomies know/know-how, or, in other words, theory/practice.

From a Derridean perspective, this binary theory/practice relationship would present a “violent hierarchy”. The first term, theory, would occupy the dominant position; while practice would occupy the dominated position, and would be subordinated to theory. This kind of hierarchical relationship would have its roots in the Platonic dualism on which modern science is based (Veiga-Neto, 2015). The Platonic ideal of the two worlds consists in understanding “that we live in a world that has, above it, an ideal world, inhabited by ideas, perfect forms, an intelligible world, which can govern what happens here in this imperfect and vulgar world, a sensible world” (Veiga-Neto, 2006, P. 7).

As a result of this Platonic dualism, it is thought that theories would be in that intelligible world, in the world of ideas, while practices would be in the sensible world, in the concrete and imperfect world (Veiga-Neto, 2015). Thus, man would be “the only one capable of living in a sensible world (the cave) reaching the light of the intelligible world (outside the cave) where the truth is, in a movement called ascending dialectic” (Veiga-Neto, 2006, p. 7). To this end, theories would function as that path of ascension from the sensible world to the intelligible world, from doubt to “truth”, from a secular world to a sacred world (Veiga-Neto, 2015).

Western mathematics understood as a theory working for modern science, would become a universal language for reaching “truth”, as can be seen in the following words from the *Il Saggiatore galileano* cited by Lizcano (2006):

Philosophy is written in that vast book that is always open in front of our eyes, I mean the universe; but it cannot be read until we have learned the language and become familiar with the letters in which it is written. It is written in mathematical language, and the letters are the triangles, circles and other geometrical figures, without which it is humanly impossible to understand a single word (p. 196).

In the Lizcano's (2006) perspective, this Galilean metaphor is condensed a whole program of legitimization of power to which would aspire a dominant minority that could access mathematical knowledge, considered as the language of the universe. As if anyone who could access mathematics would be able to explain natural phenomena. According to Santos (2008), this would have at least two implications for modern science. The first is that “to know means to quantify. Scientific rigor is measured by the rigor of measurements (...). What is not quantifiable is scientifically irrelevant” (p. 28). Moreover, the second, that scientific knowledge is causal, it “seeks the formulation of laws, in the light of observed regularities, in order to predict the future behavior of phenomena” (Ibid, p. 29).

The mathematical discourse, as questioned by Lizcano (1992) is ornamented with the characteristics of a sacred discourse; it is as if mathematics sprouted from nothing, as if it were unique and universal, transcending time, space and different cultures. This mathematical discourse became a new myth, as Wittgenstein (1987) pointed out: “[...] in mathematics we are convinced by grammatical propositions [...]. It is most probable that the verbal expression of the result of a mathematical demonstration tends to simulate a myth before us” (Part III, §26).

In the field of education, we also get used to sacralizing this discourse about mathematics. We tend to place ourselves in disciplinary mathematics to look from there at social practices, seeking to legitimize or delegitimize such practices, depending on the greater or lesser similarity they have with school mathematics (Lizcano, 2006). Thus, from Mathematics Education, the hierarchical opposition theory/practice also becomes evident.

From a Wittgensteinian perspective, these dichotomies theory/practice or mathematics/social practices could be seen as conceptual confusions. In these relationships, based on Platonic dualism and the Galilean belief that nature is written in mathematical language, there is a *one-sided diet* related to scientific knowledge and mathematical knowledge.

In the sense of Vilela (2010), the Wittgensteinian expression –‘*one-sided diet*’– helps to understand that through language, we have fed our thinking with those essentialist and referential *pictures* of mathemat-

ics; *pictures* that place it in that sacred place, which in curricular terms would be seen “as a school discipline, as a systematized and unified body of knowledge or content in itself” (Miguel, 2016b, p. 327). Moreover, being *prisoners* of these *pictures*, we have no choice but to conceive the [mathematics] curriculum as a set of generic, abstract knowledge, isolated from social practices, which must be taught to students in its essence, gradually, to enable them to apply it in any context.

The deconstruction of mathematics as a school discipline, and of the curriculum as a unified body of knowledge is possible through an *undisciplinary problematization* proposed by Miguel et al. (2010). According to Miguel et al (2012), the relationship that maintains an *undisciplinary problematization* with Wittgensteinian philosophical *therapy* is that it seeks to make a concept, a statement, or a social practice move through different contexts and fields of human activity in order to produce other meanings for that concept, statement or social practice. In turn, an *undisciplinary problematization* also presents familiarity with Derridean *deconstruction* (Miguel et al., 2010), particularly with its strategy to deconstruct the hierarchical oppositions that sustain the Western thought.

In an *undisciplinary problematization*, Derridean *deconstruction* makes possible to deconstruct oppositions and hierarchies that have been installed between disciplinary, cultural fields, and thus to transgress the disciplinary boundaries that have prevented the legitimization of those practices that were excluded from the disciplinary statute (Miguel et al., 2010). In other words, an *undisciplinary problematization* inspired by Derridean thought also means an act of transgression of the disciplinary boundaries, by making it possible to place ourselves on the margins, because as Santiago Guervós says (1995, p. 2):

There is, therefore, neither a being inside nor a being outside of the philosophy, but rather to stay in its margins, because only from there and using what Derrida calls “the double gesture” is it possible to access a new form of thought that opposes the supremacy of the Western logos, the Western logocentric reason.

From the Foucauldian thought we are also invited to have an attitude of permanent transgression, called “limit attitude, an attitude that is not simply a denial, but that always places itself in the frontiers to try to overcome them, to go beyond the limits that they seem to impose on us” (Veiga-Neto, 2007, p. 26).

According to Miguel et al (2010), Foucault and Wittgenstein approach in their respective ways to see a discourse or a *language-game* as practices, allowing to talk about ‘practicing the discourse’ or ‘practicing the language’. Moreover, according to these same authors, it is possible to treat discourse as a *power-game*, as Foucault (1996) himself suggest:

The time had come to consider these facts no longer simply because of their linguistic aspect but – and here I am inspired by the research carried out by the Anglo-Ameri-

cans –, as a game (games), strategic games of action and reaction, question and answer, domination and retraction, and also of struggle (p. 4).

The Foucauldian perspective helps us to assume an attitude of “permanent suspicion” (Veiga-Neto, 2007), making it possible to “doubt” the “truths” that circulate in discourses related to mathematics and the [mathematics] curriculum. According to Foucault (1998, p. 59), “power and knowledge are certainly articulated in the discourse”. This link between discourse and power

[...] is not strange at all, because the discourse [...] is not simply what manifests (or conceals) the desire; it is also the object of desire, because –history does not stop showing it to us –the discourse is not simply that which expresses the struggles or the systems of domination, but that for which, and by means of which one fights, it is the power of which one wants to take possession (Foucault, 2005, p. 15).

This attitude of “permanent suspicion” is always in movement, and rests provisionally on the event; this is an attitude that “is only tied to supports, always on the surface of history; [with] provisional, contingent and changing supports, as is history itself” (Veiga-Neto, 2007, p. 25). Thus, Foucault, similarly to Wittgenstein, bases himself on

[...] the contingency of the language –and *ipso facto*, of the concepts, of the meanings [...], a contingency without hooks in the sky, without anchors on the ground. [...]. Just as the event, language does not depend on any supposed transcendental principle that guides it [...] This is what Foucault means when he says goodbye to any a priori, except the historical a priori: there is neither outside, nor before, nor beyond the immediate temporal sequences of all that happens (Veiga-Neto; Lopes, 2007, p. 7).

Also, in the Foucauldian perspective, problematizations become important, since they are understood as ways of doing research that move away from the “permanent search for absolute and imperative truth” (Veiga-Neto; Rech, 2014, p. 77). According to these authors, in a problematization in the Foucauldian perspective, there is no search for binarisms, for a thought that is positioned in favor or against, “that judges what can be considered as good or bad” (Idem). Thus, we could say that Foucauldian thought presents some familiarity with the *undisciplinary perspective* proposed by Miguel et al. (2010).

With the expression *undisciplinary*, Miguel et al (2012) seek to highlight the fact that a problematization does not focus on disciplinary content – although it does not deny them – but on social practices that are taken as basic units in both school education and academic research. The *educational field's undisciplinary problematization* is not a perspective that denies school knowledge, but presents itself as a proposal based on the multiplicity of knowledge (Miguel et al., 2010). By means of an *undisciplinary problematization*, we do not seek the inter-

nalization of a particular kind of knowledge, but, following Wittgenstein's traces, we try to learn *to see in other ways* (Miguel et al., 2010).

From this *undisciplinary* perspective, supported by Foucauldian thought, one can question the dichotomous relationship between theory and practice, since for this philosopher "there is no way to separate theory and practice. Theory itself is inseparable from practice, or perhaps it is better to say: theory is already practice" (Veiga-Neto, 2007, p. 20). Thus, for Foucault, theories are conceived as *tool boxes* that are presented as discursive practices (Veiga-Neto, 2015) or *power-games*. According to Veiga-Neto (2015, p. 135), "it is the character of an instrument and not of a system that removes the theories from the world of ideas, placing them as things of this world that exists and makes them a practical instrument".

Based on Lizcano (2006), we could denaturalize this sacred discourse that has been built around Western mathematics. For this author, Western mathematics was also born somewhere, that is, the discourse about this mathematics is of this world, it is a construction like any other. For Lizcano (2006, p. 190), this mathematics can be understood "as the development of a series of formalisms characteristic of the peculiar way of understanding the world of a certain European tribe"; Western mathematics that ended up imposing itself on the rest of the tribes as 'the Mathematics' (in singular), managing to hide the prejudices and superstitions on which it was based.

For Wittgenstein (2009, Part II, XI, § 349), "of course, in one sense, mathematics is a body of knowledge, but still it is also an activity". Similarly, Wittgenstein (1987) states the following: "if mathematics is a game, then playing a game is doing mathematics, and why not also dancing?" (Part V, §4). Seeing mathematics, from Wittgenstein's perspective, means understanding it as "a set of normatively regulated language-games that can mobilize contents and meanings that are defined and specified in the different fields and contexts of human activity in which the games are developed [...]" (Miguel, 2016b, p. 338). In other words, in that perspective, participating in normatively regulated *language-games* such as, for example, the social practice of weaving a blouse is also *doing mathematics*.

From this Wittgensteinian perspective, we could also challenge the educational discourses that promote *competencies*, since they are organized based on the knowledge/know-how dichotomy or, in other words, on the theory/practice dichotomy. For Wittgenstein there would not be a moment to learn theory and another to apply it, since what is learned, in reality, is not an isolated knowledge but a social practice, and practice is learned by practicing it (Miguel, 2018, p. 76). For Wittgenstein, there is no learning without participating in a *language-game* (Miguel, 2016b). According to this author, "participating in a *language-game* is the condition for learning. We can say, then, that learning is learning to play and that you can learn to play only by playing" (p. 347). Thus,

[...] the pedagogy of language-games is based on a single belief: that you can learn only by playing. [...] [This pedagogy] is the only one that can imitate life, because living is playing, whether you know the rules of the game or not, or if the game has rules or not (Miguel, 2016b, p. 348).

In summary, once the *picture* of mathematics as school discipline and the curriculum as a set of disciplinary contents or as a set of standards that must be selected to develop some competencies has been deconstructed, we could give way to other views about the [mathematics] curriculum. A curriculum designed from the *forms of life*, such as those of the indigenous communities who live in Chocó. Perhaps it will be possible to look at the curriculum in other ways, this time through the thinking of the Embera world.

Reflections for thinking about the [mathematics] curriculum in an indigenous *territory*

As we said before, the indigenous communities of Chocó propose a “*Tejido de Saberes*” that will make possible dialogue between the ancestral knowledge of Chocó and the knowledge taught in school. According to the math teacher of the EI Katío Chamí, it was requested to “not refer to the *document* proposed by Fedeorewa as an Area Plan, but as a “*Tejido de Saberes*”” (Interview, October 31, 2019). A *weave* that is built from the *territory*.

The ancestral knowledge for the Embera of Chocó is in Mother Earth; the ancestral knowledge does not remain only in the past, it is permanently updated by its use to face the daily problems of the Embera (Mecha-Forastero, 2015). According to this author, who is an Embera indigenous leader too,

[...] knowledge is an EXPERIENCE. And in the *experiences* there is no theory separated from a practice, there is an indivisible unity between them. Theory and practice that are lived together, that have been learned as the main instrument of adaptation to the natural context [...]. (p. 18).

That ancestral knowledge transmitted from generation to generation by means of social practices is a legacy of the same nature (Mecha-Forastero, 2015). According to this author, “the territory from any indigenous point of view is the spatial center of knowledge, so the territorial configuration is based on the relationship culture-nature [...]” (p. 20). The Embera man and woman relates to the *territory* through adaptation mechanisms to nature based on respect and dialogue to maintain the natural balance (Mecha-Forastero, 2015).

This interdependence between the *territory*, the Embera man and woman can be understood according to the understanding that the Embera itself “is the same territory and nature, is the same water, moon, sun, earth, trees, animals, among others” (Ibid, p. 21). In one word, the *territory* is life. Therefore, if the *territory* is exploited, it dies. The life also

disappears, which is precisely what the notions of economic development are promoting; a model that seeks material wealth through the exploitation, domination, and domestication of nature (Mecha-Forastero, 2015).

The deconstruction of this economist, neoliberal *picture of development* allows us to see other forms of *development*, such as those proposed by the Embera of Chocó in their Life Plan (Charry; Jaramillo, 2020). A Life Plan that means for them “what we think and want to do in our territory” (Mecha-Forastero, 2015, p. 27) to continue being Embera and to be able to live with social welfare from their vision, and not from the one imposed by the modern *development model*. Social welfare for the indigenous people of Chocó

[...] is to keep free and save Mother Earth, because she is the one who allows the indigenous peoples to live in peace, in harmony with nature and provides all social welfare, here in this thought does not prevail the economic resource to find happiness, the indigenous, for social welfare, not only think about the human but all beings around or the existence of Mother Earth (Mecha-Forastero, 2015, p. 29).

From that perspective, social welfare is not only for the human, but also for all the beings of the Mother Earth, and, this type of welfare “is far from thinking about buying and selling nature to find satisfaction and happiness, then it is a good being or good living” (Idem). Consequently, the curriculum proposed by this Embera perspective is a *weave* built from the *territory* and “from the sacred integrity that is the planet Earth, its nature or any [being] in its spatiality [...]” (Ibid, p. 42).

When we look at the [mathematics] curriculum from the Embera thought and in the *undisciplinary* perspective, we could now see the conception of rationality from a Wittgensteinian perspective (Condé, 2004), which is distributed in a multidirectional network of *family resemblances* between social practices or normatively regulated *language-games*; a network that is woven from and for the *territory*, by *problematize* social practices in an *undisciplinary* manner. From this perspective, the [mathematics] curriculum would be seen as a “*Tejido de Saberes*”, as a *living document* (in constant construction and reflection), at the service of life, at the service of all forms of human and non-human life.

The *undisciplinary problematization* of social practices would not only seek to challenge the disciplinary status of educational practices, but also the methods of production and circulation of knowledge in the school, which are permeated by relationships of power and knowledge. In this sense, Foucault says (2002, p. 28): “there is no knowledge except where power relations are suspended, [...] knowledge can only be developed outside its threats, demands and interests”.

This “*Tejido de Saberes*” is not at the service of the economy, it does not put nature on sale to achieve an economic profit. In this “*Tejido de Saberes*”, the dyad theory/practice are not separated; this dyad become one, in unity. Theory/practice together in harmony with nature, to put

the ancestral knowledge of the indigenous communities of Chocó at the service of life. This ancestral knowledge is transmitted from generation to generation through oral tradition; knowledge that is enriched with other knowledges to face the daily problems of the indigenous communities.

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Notes

- 1 This article is based on a doctoral research made in the Universidad de Antioquia (Medellín, Colombia), entitled “Currículo de matemáticas: *deconstrucción terapéutica* con maestros de la Institución Educativa Katío-Chamí” (Mathematics curriculum: therapeutic deconstruction with teachers from the Educational Institution Katío-Chamí). Research financed during the year 2018 by the project “Jóvenes Excelentes y Líderes del Nuevo Chocó” (Excellent Young People and Leaders of the New Chocó); and after 2020, by the program *Excelencia Doctoral del Bicentenario* – Minciencias.
- 2 The words in italics are part of the philosophical perspective that we approach.
- 3 By referring to the [mathematics] curriculum in brackets, we seek to problematize mathematics as a school discipline.
- 4 According to Decree 2164 of 1995 of the Colombian Ministry of Agriculture and Rural Development, “the indigenous [resguardo] are the collective property of the indigenous communities in favor of which they are established and, in accordance with articles 63 and 329 of the Political Constitution, are inalienable, imprescriptible, and not subject to seizure” (Art. 21).
- 5 Institution created in 2002 by Law 1448, for the attention and reparation of the victims of the armed conflict in Colombia. Available at: <https://www.unidadvictimas.gov.co/es/la-unidad/resena-de-la-unidad/126>
- 6 The Unit for Attention and Integral Reparation of Victims has been working in this process with the indigenous community of Sabaleta since 2013. Information available at: <https://www.unidadvictimas.gov.co/es/enfoques-diferenciales/resguardos-de-la-puria-y-sabaleta-reconocidos-como-sujetos-de-reparación>
- 7 According to the 1991 Political Constitution of Colombia, the territorial entities, such as the indigenous territories (Art. 286), “enjoy autonomy for the management of their interests, and within the limits of the Constitution and the law” (Art. 287). (Art. 287) In this sense, indigenous communities have the right to be governed by their own authorities, one of which is the governor of the reservation.
- 8 This interview and the others mentioned in this document were given to Oscar Charry in the context of the fieldwork for the doctoral thesis cited in this document.
- 9 Federación de Asociaciones de Cabildos Indígenas de Chocó - Colombia (Federation of Associations of Indigenous Councils of Chocó - Colombia).
- 10 According to Mecha-Forastero (2015, p. 6), “there are differences in the Embera, based on the environment in which they live, divided into the Embera Eyapida, mountain people, Embera Oipida, jungle people, and Embera Topida, river people. Among the first ones are the Embera Katío and the Chamí”.

- 11 We use this term according to Tamayo (2012), as it is said by the indigenous people to refer to the other culture – which is not theirs.
- 12 In approaching the work of Santos (2018, p. 24), this document will use the words “knowledge” and “know-how” as if they were synonymous. Although this author admits that there are “subtle differences between them that are manifested in the use of language”.
- 13 All translations from Spanish to English are made by the authors of this article.
- 14 The reflective meetings are spaces where the teachers and principals of the Indigenous EI Katío Chamí meet to discuss different issues related to education in their community. The researcher Óscar Charry has been participating in these meetings as part of his field work.
- 15 Reflective Meeting, November 5, 2019.
- 16 The prefix “post” in “post-epistemological”, or in “post-structuralism”, is not understood as a negation nor as a temporal reference; we use it, following Miguel (2015b), in order to avoid having to choose between two opposing alternatives or between intermediate alternatives between these two extremes, “thus recognizing the impossibility of overcoming the opposition, but opening up the possibility of seeing the problem captured by the binary opposition in other ways” (p. 205).

References

- CONDÉ, Mauro Lúcio Leitão. **As Teias da Razão: Wittgenstein e a crise da racionalidade moderna**. Belo Horizonte: Argumentum, 2004.
- CULLER, Jonathan. **Sobre la Deconstrucción**. Teoría y crítica después del estructuralismo. Madrid: Cátedra, 1984.
- CULLER, Jonathan. La Crítica Postestructuralista. **Criterios**, Havana, v. 21, n. 24, p. 33-43, 1988.
- CHARRY, Oscar; JARAMILLO, Diana. Currículo de Matemáticas y Desarrollo en Debate: reflexiones desde un territorio chocoano. **REMATEC**, Belém, v. 15, n. 33, p. 31-52, 2020.
- DECRETO 2164 del 7 de diciembre de 1995. Ministerio de Agricultura. Recuperado el 21 de julio de: https://www.mininterior.gov.co/sites/default/files/1_decreto_2164_de_1995.pdf
- DERRIDA, Jacques. **Positions**. Trans, Edited by: Bass, A. London: Athlone, 1981.
- DERRIDA, Jacques. **Posições**. Tradução de T. T. da Silva. Belo Horizonte: Autêntica, 2001.
- SANTIAGO GUERVÓS, Luis Enrique de. Derrida: la estrategia de la deconstrucción. In: CONFERENCIA PRONUNCIADA EN EL COLEGIO DE ARQUITECTOS DE MÁLAGA, 31., 1995, Málaga. **Anais...** Málaga: Colegio de Arquitectos de Málaga, 1995.
- FEDEOREWA. **Experiencia Educativa Bilingüe Intercultural José Melanio Tunay**. (Documento inédito). Quibdó: FEDEOREWA, 2019.
- FOUCAULT, Michel. **La Verdad y las Formas Jurídicas** [Traducción de Enrique Lynch]. Madrid: Gedisa, 1996.
- FOUCAULT, Michel. **Historia de la Sexualidad**. Tomo 1: La Voluntad de Saber. Buenos Aires: Siglo XXI Editores, 1998.

- FOUCAULT, Michel. **Vigilar y Castigar; Nacimiento de la Prisión**. 1ª, ed. Buenos Aires: Siglo XXI Editores, 2002.
- FOUCAULT, Michel. **El Orden del Discurso**. Traducido de A. González Tusquets. Buenos Aires, 2005.
- GLOCK, Hans Johann. **Dicionário Wittgenstein**. Rio de Janeiro: Zahar, 1997.
- HIGUITA, Carolina. **La Movilización de Objetos Culturales desde las Memorias de la Práctica de Construcción de la Vivienda Tradicional Embera Chamí: posibilidades para pensar el (por)venir de la educación (matemática) indígena**. 2014. Tesis (Maestría en Educación). Universidad de Antioquia, Medellín. 2014.
- JARAMILLO, Diana. La Educación Matemática en una Perspectiva Sociocultural: tensiones, utopías, futuros posibles. **Revista Educación y Pedagogía**, Universidad de Antioquia, v. 59, n. 23, p. 13-36, 2011.
- JARAMILLO, Diana; TAMAYO, Carolina. Práticas Sociais, Currículo e Conhecimento Matemático: tecidos as interior de uma escola indígena. In: ANTÔNIO DA ROSA, Geraldo; WOLFF, Marilane. **Educação básica: políticas e práticas pedagógicas**. Campinas: Mercado de Letras, 2012. P. 101-134.
- PEC. (Documento inédito). **Proyecto Educativo Comunitario de la Institución Educativa Katío Chamí**. Sabaleta: El Carmen de Atrato, Chocó. 2015.
- LIZCANO, Emmánuel. De Foucault a Serres: notas para una arqueología de las matemáticas. **Theoria. Revista de Teoría, Historia y Fundamentos de la Ciencia**, Espanha, v. 7, n. 1/2/3, p. 499-507, 1992.
- LIZCANO, Emmánuel. **Metáforas que nos Piensan**: sobre ciencia, democracia y otras poderosas ficciones. Madrid: Traficantes de Sueños, 2006.
- MCDONALD, Henry. Narrative Theory and Cultural Studies. **Telos Journal**, v. 2001, n. 121, p. 11-53, 2001.
- MECHA, Baltazar. **La Unidad Entre La Diversidad Natural Y Cultural Como Herramienta Metodológica**. (Documento inédito). Chocó: Quibdó, 2015.
- MEJÍA, Marco. La Educación Popular en el Siglo XXI. Una resistencia intercultural desde el sur y desde abajo. **Praxis y Saber. Revista de Investigación y Pedagogía**, Boyacá, v. 6, n. 12, p. 97-128, 2015.
- MIGUEL, Antonio. A Terapia Gramatical-Desconstrucionista como Atitude de Pesquisa (Historiográfica) em Educação (Matemática). **Perspectivas da Educação Matemática**, v. 8, n. 18, 2015a.
- MIGUEL, Antonio. Uma Encenação Terapêutica da Terapia Wittgensteiniana na Condução de Pesquisas Historiográficas. **Revista de História da Educação Matemática**, v. 1, n. 1, 2015b.
- MIGUEL, Antonio. Historiografia e Terapia na Cidade da Linguagem de Wittgenstein. **Bolema**, Rio Claro, v. 30, n. 55, p. 368-389, 2016a.
- MIGUEL, Antonio. Entre Jogos de Luzes e de Sombras: uma agenda contemporânea para a educação matemática brasileira. **Perspectivas da Educação Matemática**, v. 9, n. 20, 2016b.
- MIGUEL, Antonio. Desconstruindo o Mérito da Escola Meritocrática: uma profissão de fé. En: GODOY, Elenilton.; SILVA, Marcio. Antonio. da; SANTOS, Vinício. (Org.). **Curriculos de Matemática em Debate**: questões para políticas educacionais e para a pesquisa em educação matemática. São Paulo: Editora Livraria da Física, 2018. P. 43-88.
- MIGUEL, Antonio; VILELA, Denise Silva; DE MOURA, Ana Regina. Desconstruindo a Matemática Escolar Sob uma Perspectiva Pós-Metafísica de Educação. **Zetetiké**, Campinas, v. 18, p. 129-206, 2010.

- MIGUEL, Antonio; VILELA, Denise; DE MOURA, Ana Regina. Problematização Indisciplinar de uma Prática Cultural numa Perspectiva Wittgensteiniana. **Revista Reflexão e Ação**, Santa Cruz do Sul, v. 20, n. 2, p. 6-31, 2012.
- MINISTERIO DE EDUCACIÓN NACIONAL. **Estándares básicos de competencias en lenguaje, matemáticas, ciencias y ciudadanas**. Bogotá: MEN. 2006.
- MONTEIRO, Alexandrina. Currículo de Matemática: reflexões numa perspectiva Etnomatemática. ENCUESTRO DE EDUCACIÓN MATEMÁTICA, 7., 2005, Tunja. **Anais...** Tunja: Asocolme, 2005.
- MONTEIRO, Alexandrina; MENDES, Jackeline. Prácticas Sociales y Organización Curricular: cuestiones y desafíos. **Revista Educación y Pedagogía**, Medellín, Universidad de Antioquia, Facultad de Educación, v. 23, n. 59, p. 37-46, enero-abril, 2011.
- QUICENO, Angela; MONTOYA, Daniela. **Matemáticas, Educación y Paz en la Escuela 2020**. Tesis (Maestría en Educación). Universidad de Antioquia, Medellín. 2020.
- RODRÍGUEZ, Dianne; DURÁN, Jesús. **Gente de Guaduas**. Una lucha por el honor y el terruño. Medellín: Editorial Nuevo Milenio, 2008.
- SANTOS, Boaventura. **De la Mano de Alicia**: lo social y lo político en la posmodernidad. Bogotá: Ediciones UNIANDES, Universidad de los Andes, 1998.
- SANTOS, Boaventura. **Un Discurso Sobre las Ciencias**. Boaventura de Sousa Santos. **Una Epistemología del Sur**: la reinención del conocimiento y la emancipación. México: Siglo XXI-CLACSO, 2008.
- SANTOS, Boaventura. **El Fin del Imperio Cognitivo**: la afirmación de las epistemologías del sur. Traducción de A. Torradellas G. Madrid: Editorial Trotta, 2019.
- SOUZA, Elizabeth; MIGUEL, Antonio. A Encenação de Práticas Culturais na Tessitura de Outras Escolas: a vida como eixo da ação educativa. **REMATEC**, Belém, v. 15, n. 33, p. 166-184, 2020.
- TAMAYO, Carolina. **(Re)Significación del Currículo Escolar Indígena, Relativo al Conocimiento Matemático, Desde y para las Prácticas Sociales**: el caso de los maestros indígenas Dule de la comunidad de Alto Caimán. 2012. Tesis (Maestría en Educación). Universidad de Antioquia, Medellín. 2012.
- TAMAYO, Carolina. **Vení, Vamos Hamacar el Mundo, Hasta que te Asustes**: una terapia do desejo de escolarização moderna. 2017. 295f. Tese (Doctorado en Educación) – Faculdade de Educação, Universidade Estadual de Campinas, Campinas, 2017.
- VEIGA-NETO, Alfredo. Na Oficina de Foucault. **Foucault**, v. 80, p. 79-91, 2006.
- VEIGA-NETO, Alfredo. **Foucault & a Educação**. Belo Horizonte: Autêntica, 2007.
- VEIGA-NETO, Alfredo. Anotações sobre as Relações entre Teoria e Prática. **Educação em foco**, p. 113-140, 2015.
- VEIGA-NETO, Alfredo; LOPES, Maura Corcini. Identidade, Cultura e Semelhanças de Família: as contribuições da virada lingüística. In: BIZARRO, Rosa. **Eu e o Outro**: estudos multidisciplinares sobre identidade (s), diversidade (s) e práticas interculturais. Porto: Areal, 2007. P. 19-35.
- VEIGA-NETO, Alfredo; RECH, Tatiana Luiza. Esquecer Foucault? **Proposições**, v. 25, n. 2, p. 67-82, 2014.
- VILELA, Denise Silva. A Terapia Filosófica de Wittgenstein e a Educação Matemática. **Educação e Filosofia Uberlândia**, UNICAMP, São Carlos, v. 24, n. 48, p. 435-456, 2010.

WITTGENSTEIN, Ludwig. **Observaciones sobre los Fundamentos de la Matemática**. Traducción de A. G. Suárez; U. Moulines. Madrid: Alianza. 1987.

WITTGENSTEIN, Ludwig. **Tratado Lógico-Filosófico * Investigações Filosóficas**. Tradução de M.S. Lourenço. 2 ed. Lisboa: Fundação Calouste Gulbenkian, 1995. (Originales, 1961 y 1985, respectivamente).

WITTGENSTEIN, Ludwig. **Observaciones Sobre o Ramo Dourado de Frazer**. Almeida, J. (Trad.). Almeida, J. J. A. Em Suplemento da Revista Digital AdVerbum, v. 2, p. 186-231, 2007.

WITTGENSTEIN, Ludwig. **Philosophical investigations**. GEM Anscombe (Transl.), Oxford, UK: Blackwell. 2009.

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