

Didactic of the *middle*: learning and example

Lisete Bampi¹

Gabriel Dummer Camargo¹

Abstract

In its objective paths, teaching has obstacles that describe surfaces rather than depths. *What to do?* becomes the question that sets in at the very beginning, aiming at an end. However, in its *how to do?*, didactic also aims to develop senses and decipher signs of learning, thus becoming a *middle*. Learning does not stand firmly on curricular or didactic objectivations. However, it does not occur separately from these social, cultural and also linguistic foundations. In this profusion of motions – worldly, amorous and sensuous motions –, art becomes involved in the learning sought amongst so many others which escape the paths already traveled by didactics. This article brings conceptual experiences about possibilities of a way of teaching concerned with noticing darkness spots on the surface of education, where escaping from the seeming didactic objectivity becomes possible. From then on, learning can manifest itself in the liveliness of *explication* understood as the translation of signs, thus becoming a didactic *example* of creation. Have we reached the final revelation? With Deleuze and Agamben, we can see the new that emerges in the old, the different that manifests in the equal and, finally, the creation of didactic.

Keywords

Didactic – Teaching – Learning – Deleuze – Agamben.

¹- Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, RG, Brasil.
Contacts: lisete.bampi@ufrgs.br
gabriel.dummer@ufrgs.br.

Didática do meio: o aprender e o exemplo

Lisete Bampi¹

Gabriel Dummer Camargo¹

Resumo

O ensinar, em suas vias objetivas, tem percalços que descrevem mais superfícies do que profundidades. Que fazer? se torna a pergunta que se instala no início, visando a um fim. Todavia, a didática, em seu como fazer?, tem, também, o objetivo de desenvolver sentidos e decifrar signos do aprender, tornando-se meio. O aprender não se sustenta firmemente em objetivações curriculares e didáticas. Contudo, não se dá separadamente desses fundamentos sociais, culturais e, também, linguísticos. Nesta profusão de movimentos - mundanos, amorosos e sensíveis -, a arte envolve-se no aprendizado almejado em meio a tantos outros que escapam das trilhas já percorridas pelas didáticas. Este artigo traz experiências conceituais acerca de possibilidades de um ensinar voltado a perceber pontos de escuridão na superfície da educação, onde a fuga da aparente objetividade didática torna-se possível. O aprender, desde então, pode manifestar-se na vivacidade da explicação como tradução de signos, tornando-se exemplo didático de criação. Chegamos à revelação final? Com Deleuze e Agamben, observamos o novo que surge no velho, o diferente que se manifesta no igual e, enfim, a criação da didática.

Palavras-chave

Didática – Ensinar – Aprender – Deleuze – Agamben.

1- Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, RG, Brasil.
Contatos: lisete.bampi@ufrgs.br
gabriel.dummer@ufrgs.br.

Those who take care of details often seem narrow-minded spirits, however, this part is essential, because it is the foundation, and it is impossible to raise any building or establish any method without having the principles. It is not enough to have a taste for architecture. It is necessary to know the art of cutting stones.
Édouard Ducpétioux.

How to teach everything to everybody?

Here is an intriguing question, full of reflections, times, spaces and experiences. Teaching in terms of translation directly points to “marking with a signal”, *insignare*. What sign is this? What stamp should be used? What forms of teaching-learning must be authenticated to provide such a mark? These questionings have been made for a long time, even before Comenius started to develop his *Czech Didactic* in 1627, which in turn would be transformed into the perennial *Didactica Magna* – the Latin version finished in 1638. Decisive in “ordaining and disciplining the time that is lived in school” (VEIGA-NETO, 2002, p. 164), *Didactica Magna* sought to answer the “challenge that modernity posed concerning the education of the body of children”¹ (NARODOWSKI, 2006, p. 14).

Comenius (1957) presents us a kind of mosaic, uniting pedagogical elements² already existing at the time with components of his own creation which became essential to modern pedagogy. Ever since, the objective formats of didactic that emerge as forms of teaching-learning have bothered many education professionals. These formats seem to produce roads without choices, paths unfit for building the desired creations and promoting a quality education that can handle the challenges raised

by contemporary school, avid for novelties. Well, in following a didactic methodology, “nothing is left to chance, chaos or the free will of the unexperienced. It is the marked roads and the calculated steps that will cause order to reign on bodies” (NARODOWSKI, 2006, p. 31).

As we are faced with the phrases *marked roads*, *calculated steps* and lack of *free will* as inspired by *Didactica Magna*, a feeling of impotence towards teaching begins to bother us. Hopes of the different and of didactic innovation seem to emerge as though traces of some mythological event inert in the bottom of a Pandora’s school box³. In other words, if, on the one hand, we yearn for novelties, on the other, we fear what these possible novelties will unleash in the educational world we are used to. At least this seems to be a feeling, perhaps an image, about the tiredness immanent in education’s ready traced paths, paved with stones cut in modernity.

We may think about the phrase *calculated steps* as an analogy with walking on stones – both in its difficulty and its caution –, to avoid tripping and being hurt or even breaking the *calculi*⁴. We can see that there is a concern not to deny or destroy the didactic base we already have, with its techniques and methodologies, although we might seek novelties in their *middle*. Even so, those often so-called innovative methods intertwine in non-quantifiable equalities. It all seems too equal. And teachers, as characters in school scenes, grow tired according with the number of realizations under their responsibility. Here we absorb the term *tired* as expressed by Deleuze (2010). In other words, the tired person manifests himself as the one who “no longer has any possibilities”, who “has exhausted

1- It is also curious to note that it was “around the first half of the 16th century that the unified meaning attributed to the word *discipline* – as that which was said or taught to children: *discere pueris...* – was broken down in two sections: one of knowledge and one of the body” (VEIGA-NETO, 2002, p. 171).

2- *Didactica Magna* gathered pieces of knowledge related to forms of teaching and learning, organizing the classroom, the school and the curriculum, saying what was to be done to express everything that is understood and, reciprocally, learning everything that is said (COMÊNIO, 1957).

3- The phrase *Pandora’s school box* evokes our fears in face of the articles that come from school. In the mythological story, Pandora opens the box that Zeus gave her, letting out the evils that plague humanity; only hope was not lost.

4- The word calculation derives from the Latin *calculus*, which means *stone*; *calculi*, plural of *calculus*, refers to the word used for small clay beads of different shapes that represented figures in the Sumerian numeration around the mid-fourth millennium B.C. (GUEDJ, 2011).

realization” and, therefore, “can no longer realize” (DELEUZE, 2010, p. 67). The *tired teacher*, in this sense, can create the possible with what emerges in the encounters involving the classroom, where he can do *something* with all that is already done.

However, in being *tired*, the teacher is only exhausting realizations, although he never realizes all that is possible. His activities manifest themselves like waves of tides which never change the sea where they emerge – an influence of a full moon that soon disappears in the horizon limited by plans, methodologies and foreseen didactics. The *tired person* molds himself amongst so many possibilities, in his will to profess well his teaching and in the hope of “teaching everything to everyone” (COMÉNIUS, 1957). However, to what extent what we are given refers to the *tired teacher*? To the one who realizes the different and yet seems to remain in the same? What to do with the didactic that entrenches in our educative bases? How to exhaust the possible? How to create new didactic possibilities through realizations already exhausted? To vivify critical bombings or mortify ourselves behind technicist white flags ⁵? Perhaps not everything is war.

In this article, we aim to observe a certain nuance that exists between a necessary didactic and possible encounters with the signs of learning (DELEUZE, 2003). Such signs can be worldly, amorous, sensuous or artistic. We should say that we are not interested in analyzing here how the signs of learning emerge amidst the existing didactics. Rather, our purpose is a more elementary one: we want to analyze the potency of the horizons we can see with these didactics, thinking about the possible connections and breaches that emerge in contemporary educational practices like maelstroms of encounters where the new can emerge with what was already there.

5- Veiga-Neto (1996, p. 164) describes the two great pedagogic or educational paradigms: the *technicist* and the *critical*, which, in turn, are committed to a school that can be seen as a “machine of teaching contents”.

To find possibilities that approximate us to learning (DELEUZE, 2003), in the second section of this text, we analyze how the given and chance apparently emerge as mutually antagonistic in didactic, which we view as a surface of contemporary education. In the third section, we establish a connection between didactic and movements of surface and depth (DELEUZE, 2011). In the fourth section, with the *tired teacher*, we analyze the new that comes out of the old, or the different that manifests itself on the surface and not necessarily in the depth. In the fifth section, we present an image – something like an instituted didactic – while noting that explication (RANCIÈRE, 2007), like examples and exercises (understood as purely didactical movements), is not enough to *achieve* learning. Thus, we reach the sixth section, where we manifest the need for the existing paths surrounded by breaches (unforeseen and possible) – full of hieroglyphs to be interpreted.

Finally, with Agamben (2013) and Deleuze (2003), we express that learning can manifest itself in the liveliness of *explication* as a translation of signs, becoming a didactic *example* of creation that moves independently, by means of “the very power of this thing without a name that is Life” (LISPECTOR, 2012, p. 25). And in turn, the question ‘*how to teach?*’ continues to spiral amidst the echo of didactic possibilities that are created.

From surface to chance

It is worth noting that *Didactica Magna* denotes that nothing in teaching should be left to “chance”⁶ (*azar*)⁷. The givens that didactic presents as the *marked roads* we should travel become homonymous in the same sentence that condemns the chance-produced givens of the unexperienced (NARODOWSKI, 2006, p. 31). Chance to chaos: regardless of this suggestive

6- Translator's Note: The author uses the Portuguese word *azar*.

7- *Az-zhar*: the Arabic word that originated the Portuguese word *azar* and which designates the object of an old game, a game of dice (GALÉ, 1961, p. 45).

anagram, on the one hand, we have the *givens* of didactics that we should follow and, on the other, we have the *dice game, chance* (TN: *azar*), which we should avoid due to its unpredictable, often chaotic content. But how to rid ourselves of the chaos that attacks classrooms, allowing ourselves to be guided by the givens that stop chance from dictating the rules? Givens alone can do nothing: they do not spin, play, bet or teach. And without givens, no game is possible either.

The future and the past, the more and the less, the much and the little, the excessive and the insufficient, the yet, the already, and the not: for the event, infinitely divisible, is always both at once, eternally what has just passed and what is about to pass, but never what is passing (DELEUZE, 2011, p. 9).

The given and chance are part of the educational event. Therefore, what we propose is an old look at the new, or a new look at the old. In other words, we sustain that the new is not made independently of what we have done. That is, with what we have we can see something new reverberating. Therefore, we want to observe the chance that intersperse givens and the givens that move chance. Givens in chance and chance in givens⁸. The equal is just a sign amidst so many different equations that can be carried out: infinite ones. An *ad infinitum* without regressions that does not let itself be fixed into only one dimension – a glance of differential possibilities in education. There are always differences in repetition.

'But how to teach?', a voice continues to echo. Is it necessary to explain? Yes, it is. To exemplify? Yes. To exercise? This too. Objectivities of *how to do?* which emerge as forms of the looking-wanting division: fragmented irises and pupils in countless fragments of broken mirrors – there are many

reflections in a same vision. In the depths of Alice's looking-glass, an image reflects movements⁹, unfolding on a crystal surface.

The animals from the depths become secondary, they give space to *figures of playing cards* without thickness. One might say that the old depth has unfolded into surface, turned into breadth. [...] Events are like crystals, they do not change nor grow expect for the edges, in the edges. [...] With all the more reason for *Through the Looking-Glass, and What Alice Found There*. There, events, in their radical difference in relation to things, are definitely no longer sought in depth, but on the surface, in this thin, incorporeal vapor that escapes from bodies, a volumeless film that covers them, a mirror that reflects them, a board that makes them flat (DELEUZE, 2011, p. 10).

Didactic as a surface of education that we explore involves greater depths than in the escape from itself. The great novelties and differences we seek in everyday classes emerge as though surrounded in a thin vapor that comes out of these daily equalities. In other words, we need not seek deep differences in the depths to manifest novelties in education. Rather, the differences themselves emerge from the didactic surface – like a thin, incorporeal vapor – and they manifest events that allow didactic recreations. The surface of an instituted didactic, in this sense, unites with the depths of methodologies, plans, evaluations and related theories which are not simply paths to be discovered. Being attentive to the breaches in school routines and recreating them in the path of learning itself becomes a gesture that can provide teachers and students with the different.

Students and teachers are always wrapped in encounters, even if with themselves.

8- Translator's Note: The author builds a pun with the Portuguese word *dado*, which can mean both *given* and *die/dice*.

9- In Carroll's novel (2010), Alice begins her adventure by going through a mirror, and she realizes that in spite of the similarities, that place is quite different from her original home in that paintings seem to be alive and even the clock has an old man's face that smiles at her.

So in what sense can the *tired teacher* open up worlds to be exhausted? Well, the one who “teaches affirms a gesture” that can be recreated by those who learn (KOHAN, 2008a, p. 75). And, likewise, he can also recognize in our time the “‘too early’ that is also a ‘too late’”, an ‘already’ that is also a ‘not yet’” (AGAMBEN, 2013, p.66). So let us proceed to analyze the *tired teacher* and his gestures by means of the possible breaches through which novelties – as didactic recreations – can emerge from the equalities that form the domains of life.

Didactic and the *tired teacher*

As mentioned earlier, the question ‘*how to teach?*’ already existed even before Comenius established his *Didactica Magna*. In that synthesis of pedagogy, we find the presentation of the fundamental characteristics of modern school reflected in everyday practices. The classroom was invented, organized by age, maturity level, contents to be learned, among other needs that emerged with modernity. In this reference school system, it is believed that man should be educated as belonging to human kind, i.e., not to that of wild beasts, brutes or inert trunks (NARODOWSKI, 2006, p. 26).

Ever since, principles and rules of ‘*how to teach?*’ intertwine in worldly signs – signs that anticipate action and thought and declare themselves sufficient – spreading in a superficiality that is often uncomfortable and dissonant in its technicist paradigms: the school as a machine and didactics as the toolbox (VEIGA-NETO, 1996). Hence the desire to escape, to deepen – to dive and see education in its depths –, in the heart of its critical paradigms, in essentially political questions (VEIGA-NETO, 1996). A desire to seek “still the secret of events and the unlimited becoming that they imply” (DELEUZE, 2011, p.10).

There is the need not to be a machine, but human, to be concerned with the social roles and political goals of schooling, with the hidden curriculum and local cultures. In this

perspective, on the one hand, we observe those who seek deepening in so-called innovative practices and theories as though they were diving in the heart of the factors that pervade education to extract a life that is still hidden from our eyes. On the other hand, there are those who let themselves be guided by existing didactics and methodologies as though they were surfing amidst unavoidable waves in a molded surface. It seems to us that this ocean does not belong only to these divers and surfers. Which one of them is more of a specialist? Which one knows best the power of this sea? Who are the ones who know best the movement of the waves or can identify the inner causes of these movements?

Well, “as we advance in the narrative”, the “diving and burying movements give space to sideways sliding movements, from left to right and from right to left” (DELEUZE, 2011, p. 10). There is sense in the surface and also technique in the depths. The surfer becomes involved in waves and the diver needs a vast equipment to breathe and not feel the possible (o)pression of the depths. Likewise, teachers deepen into their didactics, pursuing sense for their practices. And, at the same time, they prepare technically in order to find the novelties that escape preconceived didactics.

Didactic as a technicist principle of a school machinery (VARELA; ALVAREZ-URIA, 1992) –, or a critique as the movement of an “inescapably multicultural society” (MOREIRA, 2002, p. 15) –, sustains itself as an educational surface, as worldliness (DELEUZE, 2003): the starting point of a *middle* that integrates into a learning that is difficult to limit in methodologies or related theories. The reaction in face of the discomfort of *how to do?* is part of the didactic possibilities. The *tired person* that exhausts himself in realizations points to the repetition that traces back to technique and also to the exhausted person (DELEUZE, 2010). After all, it is in the exhaustion of possibilities that creation emerges, not in tiredness itself, in the repetition of possible realizations.

Being exhausted is much more than being tired [...] The tired person no longer has any (subjective) possibility at his disposal; he therefore cannot realize the slightest (objective) possibility. But the latter remains, because one can never realize the whole of the possible; in fact, one even creates the possible to the extent that one realizes it. The tired person has merely exhausted the realization, whereas the exhausted person exhausts the whole of the possible. The tired person can no longer realize, but the exhausted person can no longer possibilize. (DELEUZE, 2010, p. 67).

The possibilities of creation emerge when it is no longer possible to realize with what we have, with didactic, space, time, the old, explications, examples, exercises, contents, and plans. One has to recreate them in the didactics themselves. Thus, the *tired teacher* is not that teacher without energy, but the one who travels all possible paths, repeating them with primacy, observing methodologies and didactics, at the verge of mastery. In this repetition, manifestations of different, interesting activities can emerge which the teacher can realize in face of his everyday experiences in the act of teaching.

As an example, we can refer to activities we have conducted with elementary students, which were analyzed in other works of our research: the teaching of polyhedrons, a mold, four large tables in a mathematics lab, forty minutes time, and exercises to be conducted were turned into a marathon (BAMPI et al., 2013); or, in the teaching of prime numbers and multiple numbers, from a few playing cards and a *magic hat, something* emerged which brought joy to class planning and the daily classes (BAMPI et al., 2014). Didactic experiences through which we *discern* brief images of an exhaustion of possibilities that emerged from the tiredness inherent in the archaic conditions we had at our disposal.

Did we get near the *arké* and recognized its signature? Did we indistinctly see *something*

in the time we had for teaching? Did we experience each bit of time we were given and perceive the darkness that headed towards the classroom – our era? Infinitely distancing from it, we can be contemporary of an education that exhausts the possible and identifies the secret commitment that exists between the archaic and the modern, allowing us to “return to a present where we have never been” (AGAMBEN, 2009, p.70). And that is when we find something different – the thought adventures into the breaches of the present –, with the old that becomes new.

What is in question in this article is the commitment to contemporary school, which is urgent within the chronological time, transforming this time in favor of untimely didactics. Worldly signs are not homogeneous: from one class to the next, they can evolve, immobilize or be replaced by others that may appear. The apprentice’s task consists of understanding how these signs work through anticipating action and thought, cancelling thought and action, declaring themselves sufficient.

The worldly sign appears as the replacement of an action or a thought. It stands for action and thought. [...] One does not think and one does not act, but one makes signs [...] The worldly sign does not refer to something, it ‘stands for’ it, claims to be equivalent to its meaning. [...] The apprenticeship would be imperfect and even impossible if it did not pass through them. These signs are empty, but this emptiness confers upon them a ritual perfection, a kind of formalism we do not encounter elsewhere. (DELEUZE, 2003, p. 6).

The worldliness that didactic absorbs in its formalism becomes an essential world, one through which passage is mandatory to everyone who wants to know the other worlds of the signs of learning. As a means to exemplify this analysis, we created an image that we develop as follows.

Only an image

Let us think for a moment about a didactic in itself, or rather a hypothetic elementary way of teaching. Generally, we can divide teaching in explaining, exemplifying and exercising (there are other forms that, in their theoretical essence, seem to fall into one of these categories). Learning escapes these subdivisions, although it permutes itself in their breaches. So let us briefly observe the movements of teaching as didactic principles. We will picture a mathematics class, more specifically about plane geometry. To conduct this class, the teacher should begin an explication of the content and explain its most elementary concepts, namely: the notions of point, straight line and plane. But how to explain concepts that are primitive in themselves? This question can become an example of how words are not enough to give us to understand a given subject: there is the need of leaps as though by intuition.

As we examine a few didactic books – when they dare bring explications about the notions above¹⁰ –, we realize that “primitive notions are adopted without a definition”, and “of each of these entities (point, straight line and plane) we have an intuitive knowledge that comes from experience and observation” (DOLCE; POMPEO, 1985, p. 1)¹¹. We then explain to students that as “products of the human mind, primitive notions work as models to explain reality” (BARROSO, 2010, p. 141). However, in order to identify such notions, we can unfold that explication which does not exist into other explications characteristic of such concepts: “a point has no dimension, mass or volume”; “a straight line has no thickness, a start or an end”; “a plane has no thickness or

borders” (BARROSO, 2010, p. 141). In a word, they are intuitive.

We can still exemplify such concepts with images that involve them in their similarities: a point is like a location in space; the full stop of this sentence represents a location in this page or “a small whole in a paper” (BARROSO, 2010, p. 141); a straight line is like a segment that does not have an end: we can imagine the lines in the notebook as parts of a straight line; for the plane, the page itself or the surface of the table can be representative of an example or even the “quiet waters of a lake” (BARROSO, 2010, p. 141).

Exercises that testify the assimilation of these primitive concepts are usually not found in didactic books: this remark sounds logic, since they are primitive. After the concepts’ introduction, one proceeds straight to the propositions, postulates and theorems that involve them as mathematic concepts. However, we can imagine a few exercises as examples of our illustration: give five representative examples of points in the space; draw a straight line segment; make a sketch of a plan, and give examples of surfaces that can represent it. With this image – projected in our thought – we set out into the uneasiness that such a didactic imposes on us with the explication expressed by *Jacotot* (RANCIÈRE, 2007).

Didactic and explication

The explication unfolds over itself by the limitations of language, hence the regression to infinite expressed by the ignorant master (RANCIÈRE, 2007). We can illustrate the lines that the explications conduct as segments of a fractal¹². However such lines might surround an area, they will never fully capture it – at least if we indefinitely continue in a linear trajectory –, they emerge as an infinite line that serves as the

10- We analyzed a few books that begin the explication of the content of plane geometry by using, initially, the primitive concepts, without any introductory explication about them.

11- Guelli (1999, p. 133) tries to explain why certain notions are considered primitive: “when a new term is introduced, it is defined in function of terms that have already been defined” and the “first definition cannot be formulated this way, because there is no term that has been already defined”.

12- The word ‘fractal’ was adopted by Mandelbrot in 1975 to describe forms which repeat themselves in a same object, in different scales. The word ‘fractal’ has its etymological root in the Latin *fractus*: the Latin verb *frangere* means to break, divide in irregular fragments (PROVIDÊNCIA, 2011, p. 112-113).

perimeter of a finite area. In practice, there will always be one last line yet to be traced. However, when we think we have found the last length to cover, it suddenly breaks into other infinite conceptual little pieces, unspeakably, primitive and elementary. What to do but to compensate the disappointment that is manifested in this learning through explication? Who can become sensitive to the less deep signs of the didactic in question? The disappointment if a fundamental moment in learning (DELEUZE, 2003).

Therefore, maybe we will find here an *agio*¹³ – like fashion in its inapprehensible *kairós* (AGAMBEN, 2009) –, an irrepresentable space beside, the empty place where it is possible to move freely in an opportune time (AGAMBEN, 2013). Amidst the fractal segments in the explication, there is something that escapes us – that escapes spoken, heard or even signaled concepts. In the *middle*, there are other senses that pass us close by and emerge as sensuous signs we cannot describe, summoning us in invitations, providing us with a vision beyond the horizon of words (CAMARGO; BAMPI, 2013).

The question that imposes itself is underpinned on the need to analyze what escapes explication – as the hyphen necessary to certain forms of the phrase ‘teaching-learning’¹⁴ – so that we can *reach* learning. We do not mean by this that explication is ineffective or unfit for teaching. It emerges as a starting point that captures the givens of the problems we face in a language that is accessible to the most superficial senses – it is didactic. By providing facilities in teaching-learning, explication can often numb the senses, cause thoughts in potency to grow lazy, thoughts that might otherwise see the acts of one’s soul become active by means of others.

13- *Agio* is a Latin word that means ‘at will’ and, depending on the context, it can give the idea of interval, free space.

14- Explication apparently produces a bond between the one who teaches and what the student learns, i.e., under the explicative order, the student can only learn what is taught. Thus, we suppose we can control learning: driving others and driving ourselves to think the already thought (GALLO, 2008).

Questions tend to cease when explications are given because that is what explications are supposed to do: to remove doubts: ‘I didn’t get it, explain it, please! Again... Again... Again...’ a student once said (CAMARGO; BAMPI, 2013).

So, should we not explain? Shall we provide only examples to students? This thought becomes just one of the faces of explication, albeit wearing less objective clothes thanks to the associations it allows with forms of the phrase teaching-learning. Examples are molded over definitions and express in themselves explications of the type ‘*this is how you do it*’, instead of the ‘*this is how it is*’ of the explication underpinned on defining the meaning of a piece of knowledge, relying on the question ‘*what is this?*’ (CAMARGO, 2011). The explication as definition delimits paths on a surface in motion that does not naturally provide sufficient impulse for us to dive into a dynamic, creative learning. The example, on the one hand, identifies patterns, repeating them in a kind of authorized copy of a movement of the thought which *gives* the thought rather than *makes* one think. And in this explicative movement, the effort becomes reduced by the mold to be said, and is not defined by any property.

Only exercises are effective in teaching? Perhaps a necessary experience – as the one found by *Jacotot* (RANCIÈRE, 2007) – has its gains. Although in this case, it was more of a guessing act than an exercise. Exercises can drive one to try to build something by oneself, but they normally do not come alone, infiltrating themselves in the territory of explications and examples. What we aim to observe is the general structure of the didactic involved in the process learning that: [...] combines, in the French language, both meanings, i.e., that of *learning* and that of *teaching*, in a common act between the one who teaches and the one who is taught (SCHÉRER, 2005, p. 1184).

Learning does not stand firmly on curricular and didactic objectifications. However, it does not occur separated from these social, cultural and linguistic foundations.

Learning is essentially concerned with signs. Signs are the object of a temporal apprenticeship, not of an abstract knowledge. To learn is first of all to consider a substance, an object, a being as if they emitted signs to be deciphered, interpreted. There is no apprentice who is not the 'Egyptologist' of something (DELEUZE, 2003, p. 4).

Explications, examples and exercises – *first of all* – are necessary foundations, as well as being able to write is necessary to write a letter, a novel or even an article. And here, in this article, we explain, exemplify and leave questions like exercises for thought. Language, words that are spoken, heard, written, read or even pictured emerge as inherent givens so there can be communication, interaction, the possibility of emission of signs to be deciphered, for example, in poetry.

Likewise, even though we might not allow ourselves to be tied down by objective principles, we can see that they are necessary for the learning that goes beyond didactic foundations. Principles that delimit but do not completely fill out what happens in the *middle* – between the apprentice and the object of apprenticeship, between what is thought and what is learned (CAMARGO; BAMPI, 2013). There are breaches, dark points, where escaping the apparent didactic objectivity becomes possible – a darkness that sets in motion our *off-cells*¹⁵ – to recognize in the present the light of a learning that, “without ever being able to reach us, is perennially traveling towards us” (AGAMBEN, 2009, p. 66).

Didactic and learning

Learning (DELEUZE, 2003) involves more than words, exemplifications, exercises solved, forms of teaching-learning. We can have all that

and still not to know. And in an escape from those domains, not to know that we knew. In these stagings and recreations of knowledge, we reach the art of coloring worlds that manifests itself in our own words and thoughts, however unspeakable. Thus, learning can be thought about as a character in motion reflected in the experiences of each student and teacher, and it cannot be found naturally roaming around the streets of didactics. However, didactics become a great place to start looking for it, *first of all*, by observing carefully the slits before they close, as if we were capturing animals from the depths through a thin vapor (DELEUZE, 2011). By not allowing ourselves to be blinded by the lights of this *city-century* – indistinctly seeing in them the part of shadow and realizing that this darkness concerns us, without ceasing to interpret it – we can reach the apprenticeship of the art. It is a pursuit that requires leads, objectives and criteria that are often strict and even authoritarian.

Art is subject to many powers, but it is not a form of power. It is of little consequence that the actor-author-director exerts influence and assumes an authoritarian manner, even a very authoritarian one. This would be the authority of perpetual variation in contrast to the power or despotism of the invariant. [...] Variation must always vary itself. That is, it must travel through new and always unexpected routes (DELEUZE, 2010, p. 60).

In the givens, like worldly clichés, we can find the breaches of a *sensuousness open* to the signs that the world emits, finding ourselves at moments that are often inopportune – “unexpected paths” (KOHAN, 2008b). The breaches are made of the leaps we need to take to escape the regressions to infinite of explication and, even, the worldliness of information. In order to find the United Kingdom as an existing, real territory¹⁶, leaps through the

15- “Neurophysiologists tell us that the absence of light disinhibits a number of retinal peripheral cells, precisely designated *off-cells*, which become active and produce that particular kind of vision that we call darkness” (AGAMBEN, 2009, p. 63).

16- In several countries, coastlines are not regular curves, they wind up in a succession of capes and coves which in turn are formed by other capes and coves which appear whenever the scale is increased. Great Britain's coastline can be considered a fractal curve.

sands of a chilly shore are necessary to wake us up, making us emerge from the depths. As givens of the real world, didactics expose a world of worldly signs. Such signs are empty in themselves. However, the worlds of the signs of learning are interconnected in a practically homogeneous way.

Now the world of art is the ultimate world of signs, and these signs as though *dematerialized*, find their meaning in an ideal essence. Henceforth, the world revealed by art reacts on all the others and notably on the sensuous signs; it integrates them, colors them with an aesthetic meaning and imbues what was still opaque about them. [...] This is why all the signs converge upon art; all apprenticeships, by the most diverse paths, are already unconscious apprenticeships to art itself. At the deepest level, the essential is in the signs of art (DELEUZE, 2003, p. 13).

Out of the worldly signs leap the amorous signs – intriguing and painful –, moving us from where we stand, from the inertia of thought. By means of the worldly and amorous signs, we can see the sensuous signs emerge in their potential of colors and possibilities of senses, reporting unique, singular experiences amidst the learning that moves around in artistic creations. In this profusion of movements amongst worldlinesses, loves and senses, art becomes involved in the desired learning amidst so many others that escape the paths traveled by didactics. Such paths are no longer just paths marked by explications, exercises and exemplifications, but also by the art of teaching and learning that resides in the movements of thought that can reveal other didactics.

Marking with a sign cannot be molded into a stamp, into something ready, modulated and strict; nor into an awakening like a shot that starts a race; nor into a siren that sounds the warning to begin a school day's work for students. The possibilities of learning will

appear out of tiredness itself, inherent in the worldly systems in effect in the technician, critical or constructivist teaching, among others. The exhaustion of possibilities becomes a necessary condition for unexpected encounters where creation makes its presence felt within predefined goals, providing an unusual class.

Have we reached the final revelation?

We observed the new that emerges in the old, the different that manifests itself in the equal and, finally, the creation that proceeds from didactic. The *how to teach?* disintegrates in multiple paths – like the configurations of world that we build, which are also multiple –, where encounters with the signs of learning are constant. The surface is as necessary as the depth, and one should mind, as one lets oneself sink, not to lose one's breath and end up suffocated in illusions. We still need the surface as a breathing space so we can dive deeper and deeper into this ocean of possibilities, as though in an encounter where education turns into didactic and vice-versa – translating its mysteries. Such didactic allows expressing the forms that learning builds in its middle with the singular experiences of teachers and students. In the experiences are the reflections of possibilities of an educational body that is completed in movements, in encounters with worldly, amorous, sensuous, and even artistic signs.

Mixtures are in bodies, and in the depth of bodies: a body penetrates another and coexists with it in all of its parts, like a drop of wine in the ocean, or fire in iron. One body withdraws from another, like liquid in a vase. Mixtures in general determine the quantitative and qualitative states of affairs: the dimension of an ensemble – the red of an iron, the green of a tree. But what we mean by “to grow”, “to diminish”, “to become red”, “to become green”, “to cut”, and “to be cut,” etc., is something entirely different. These are

no longer states of affairs – mixtures deep inside bodies – but incorporeal events at the surface which are the result of these mixtures (DELEUZE, 2011, p. 6-7).

In this passage of *The Logic of Sense*, we can correlate bodies to the signs of apprenticeship, events to encounters with those signs, where the surface wears once again the clothes of didactic. Well, the worlds of signs are not linear, they become mixed in the art of learning, in the “*linea generationis substantiae*” itself, which varies in every sense according with a continuum of growth and remission, appropriation and impropriety” (AGAMBEN, 2013, p. 27).

Didactic becomes a fundamental landmark as a worldly principle in this relationship, absorbing and emanating teaching experiences – as ripples in a pond –, in the *ductus* that identifies its singular presence “without a point [...] in which a real border can be traced between both spheres” (AGAMBEN, 2013, p. 28). The expressiveness of an instituted didactic and the singular experiences of teachers and students “exchange roles and interpenetrate reciprocally”, occurring “each time both ways according to a line of alternating scintillation” (AGAMBEN, 2013, p. 28). Thus, maybe we teachers and students can, by means of this incessant pursuit, reach the world of art.

By means of didactic principles, such as this article – why not? –, which is full of metaphors, examples, explications, abstractions, we can share that *how to do?* As an art of teaching – images that approximate us to learning. As the central character of these didactic scenes, we have the teacher as a *being* who, often accompanied by a student half-disciple, half-samurai, makes journeys that last months in the pursuit of truth. Here, in this panoramic view of education, the comprehension occurs to us that didactic as a creation can be thought about as a translation of signs that resist *in* the didactic explication. After all, “there is a fundamental affinity between a work of art and an act of resistance” (DELEUZE, 1998, p. 13).

We could then say, not as well, from the point of view that concerns us, that art resists, even if it is not the only thing that resists. Whence the close relationship between an act of resistance and a work of art. Every act of resistance is not a work of art, even though, in a certain way, it is. Every work of art is not a resistance, and yet, in a certain way it is (DELEUZE, 1998, p. 13).

In these brief traces of a writing – *didactic signs* that we exchanged with our readers –, the explication as a translation of signs (DELEUZE, 2003, p.91) becomes mixed with the example (AGAMBEN, 2013, p. 18). Like a concept that “has always been familiar to us”, it escapes the antinomy between the universal and the particular”. The “explication” becomes confused with the “development of the sign in itself” (DELEUZE, 2003, p.16). The example like “that which is shown beside” becomes a “purely linguistic being” (AGAMBEN, 2013, p.18).

In any context where it exerts its force, the example is characterized by the fact that it holds for all cases of the same type, and, at the same time, it is included in these. It is a singularity among others, which, however, stands for each of them and serves for all. On the one hand, the example is treated in effect as a real particular case; but on the other, it is understood that it cannot serve in its particularity. Neither particular nor universal, the example is a singular object that presents itself as such, that shows its singularity (AGAMBEN, 2013, p. 18).

By forming a kind of *relationship* with the abstract movements of thought inspired by Deleuze (2003) and Agamben (2013), we have reached something that can give passage to the learning-happening. Different forms of exercises of thought can be recreated in paths that approximate us to the world of art, manifesting themselves as learning, as the work of repetition in potency. The trajectory of

modern education through didactic principles can provide images of these paths. In the time that unfolds into present and past, i.e., casting itself towards the future and falling in the past (DELEUZE, 1988), we can think about such principles as images that spurt from the slits of the didactic surface in our time.

Paths we travel in other experiences that show us that this is possible – doing something different –, when perseverance

unites the necessity to present a quality education – the one we aim at for the school and the university. Resorting to paradoxes, we collected something from experiences – the product of the challenge of wanting to explain the inexplicable – and reached our revelation. Since then, learning can manifest itself in the liveliness of *explication* as a translation of signs, and it can be thought about as a didactic *example* of creation.

References

- AGAMBEN, Giorgio. **A comunidade que vem**. Belo Horizonte: Autêntica, 2013.
- AGAMBEN, Giorgio. **O que é o contemporâneo? e outros ensaios**. Tradução Vinicius Nicastro Honesko. Chapecó, Santa Catarina: Argos, 2009.
- BAMPI, Lisete Regina et al. Em meio ao PIBID e aos estágios de docência – da escrita na leitura. **Zetetiké**, Campinas, v. 21, n. 40, p. 120-125, jul./dez. 2013.
- BAMPI, Lisete et al. Numa brincadeira de aprendiz de feiticeira... Surge algo. **Revista Sul-Americana de Filosofia e Educação**, Brasília, DF, n. 21, p. 170-184, nov. 2013/abr. 2014.
- BARROSO, Juliane Matsubara. **Conexões com a matemática**. São Paulo: Moderna, 2010.
- CAMARGO, Gabriel Dummer. **O ato da explicação e o aprender: experiências com o ensino de matemática**. 2011. Trabalho de conclusão de curso – (Graduação – Licenciatura em Matemática) – Universidade Federal do Rio Grande do Sul, Porto Alegre, 2011b. Disponível em: <<http://hdl.handle.net/10183/31956>>. Acesso em: 02 abr. 2016.
- CAMARGO, Gabriel Dummer; BAMPI, Lisete. O que acontece no meio? **Educação**, Porto Alegre, v. 36, n. 3, p. 385-392, set./dez. 2013.
- CARROLL, Lewis. **Alice no país do espelho**. Tradução de William Lagos. Porto Alegre: L&PM, 2010.
- COMÊNIO, João Amós. **Didáctica magna**. Tradução e notas de Joaquim Ferreira Gomes. Lisboa: Fundação Calouste Gulbenkian, 1957.
- DELEUZE, Gilles. **Lógica do sentido**. Tradução de Luiz Roberto Salinas Fortes. 5. ed. São Paulo: Perspectiva, 2011.
- DELEUZE, Gilles. O ato de criação. **Folha de S. Paulo**, São Paulo, 1999. Disponível em: <<http://claudioulpiano.org.br/s87743.gridserver.com/?p=6588>>. Acesso em 4 mar. 2014.
- DELEUZE, Gilles. **O atual e o virtual. Diálogos**. Tradução de Heloisa Araújo Ribeiro. São Paulo: Escuta, 1998. p. 173-179.
- DELEUZE, Gilles. **Proust e os signos**. Tradução de Antonio Carlos Piquet e Roberto Machado. 2. ed. Rio de Janeiro: Forense Universitária, 2003.
- DELEUZE, Gilles. **Sobre o teatro: um manifesto de menos**. O esgotado. Tradução de Fátima Saadi, Ovídio de Abreu e Roberto Machado. Rio de Janeiro: Jorge Zahar, 2010.
- DOLCE, Osvaldo; POMPEO, José Nicolau. Geometria plana. In: IEZZI, Gelson et al. (Org.). **Fundamentos de matemática elementar**. São Paulo: Atual, 1985. v. 9. GALÉ, José Gonzales. O jogo de dados na pré-história. In: TAHAN, Malba. **Antologia da matemática**. v. 2. São Paulo: Saraiva, 1961. p. 45-47.

GALLO, Sívio. O problema e a experiência do pensamento: implicações para o ensino da filosofia. In: BORBA, Siomara; KOHAN, Walter (Org.). **Filosofia, aprendizagem e experiência**. Belo Horizonte: Autêntica, 2008. p. 115-130.

GUEDJ, Denis. **El império de los números**. Barcelona: Blume, 2011.

GUELLI, Oscar. **Matemática: uma aventura do pensamento**. São Paulo: Ática, 1999.

KOHAN, Walter Omar. **Filosofia: o paradoxo de aprender e ensinar**. Tradução de Ingrid Müller Xavier. Belo Horizonte: Autêntica, 2008a.

KOHAN, Walter Omar. O que pode um professor? **Educação**, São Paulo, Especial, p. 48-57, 2008b. Biblioteca do professor, n. 6. Deleuze pensa a educação.

LISPECTOR, Clarice. **Crônicas para jovens: de bichos e pessoas**. Rio de Janeiro: Rocco, 2012.

MOREIRA, Antonio Flavio Barbosa. Currículo, diferença cultural e diálogo. **Educação e Sociedade**, Campinas, v. 23, n. 79, p. 15-38, 2002.

NARODOWSKI, Mariano. **Comenius e a educação**. Tradução de Alfredo Veiga-Neto. 2. ed. Belo Horizonte: Autêntica, 2006.

PROVIDÊNCIA, Natália Bebiano da. $2+2=11$. Lisboa: RBA, 2008.

RANCIÈRE, Jacques. **O mestre ignorante**. Tradução de Lílian do Valle. 2. ed. Belo Horizonte: Autêntica, 2007.

SCHÉRER, René. Aprender com Deleuze. **Educação e Sociedade**, Campinas, v. 26, n. 93, p. 1183-1194, set./dez. 2005.

VARELA, Júlia; ALVAREZ-URIA, Fernando. **A maquinaria escolar**. Teoria e Educação, Porto Alegre, n. 6, p. 68-96, 1992.

VEIGA-NETO, Alfredo. A didática e as experiências de sala de aula: uma visão pós-estruturalista. **Educação & Realidade**, Porto Alegre, v. 21, n. 2, p. 161-175, jul./dez. 1996.

VEIGA-NETO, Alfredo. De geometrias, currículo e diferenças. **Educação e Sociedade**, Campinas, v. 23, n. 79, p. 163-186, 2002.

Received on October 28th, 2014

Approved on September 1st, 2015

Lisete Regina Bampi holds a licentiate in mathematics, a Master's degree and a Ph.D. in education from the Universidade Federal do Rio Grande do Sul (UFRGS). She currently teaches at the Faculdade de Educação at the same university.

Gabriel Dummer Camargo holds a licentiate in mathematics, is an undergraduate philosophy student and a Master's student at the Universidade Federal do Rio Grande do Sul (UFRGS). He currently teaches at the Escola Estadual de Ensino Médio André Leão Puente, in Canoas, RS.