

## MATHEMATICS EDUCATIONS OF HELPLESSNESS

*EDUCAÇÃO MATEMÁTICA DO DESAMPARO*

*EDUCACIONES MATEMÁTICAS DE LA INDEFENSIÓN*

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### ABSTRACT

The main objective of this paper is to present a mathematics education of helplessness in a problematization movement of political affects. So, we produce a discussion about Circuit of Affects, by the Brazilian philosopher Vladimir Safatle, in which fear and hope are constituted as affects that paralyze us and prevent us from creating new forms of life. Helplessness could be constituted as an affect for us to move with the contingency outside the temporality of expectation. The Covid-19 pandemic is used as example for our considerations in the direction of presenting, in a first draft, three concepts to think/operate a mathematics education of helplessness: scale, belonging and border. A mathematics education with Gaia between humans and non-humans in becoming movements.

Keywords: mathematics education. helplessness. fear. hope. anthropocene.

### RESUMO

O principal objetivo deste artigo é apresentar uma educação matemática do desamparo em um movimento de problematizações de afetos políticos. Assim, produzimos uma discussão a respeito do Circuito dos Afetos do filósofo brasileiro Vladimir Safatle, na qual medo e esperança se constituem como afetos que nos paralisam e nos impedem de criar novas formas de vida. O desamparo poderia se constituir como um afeto para nos movimentarmos com a contingência fora da temporalidade da expectativa. A pandemia da Covid-19 é utilizada como exemplo para nossas considerações na direção de apresentar, em um primeiro esboço, três conceitos para pensar/operar uma educação matemática do desamparo: escala, pertencimento e fronteira. Uma educação matemática com Gaia entre humanos e não-humanos em movimentos devires.

Palavras-chave: educação matemática. desamparo. medo. esperança. antropoceno.

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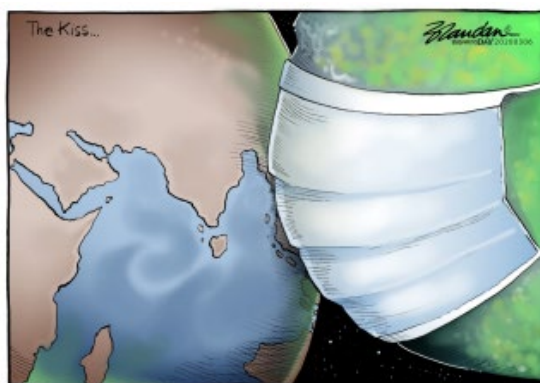
## RESUMEN

El objetivo principal de este artículo es presentar una educación matemática del desamparo en un movimiento de problematización de los afectos políticos. Así, producimos una discusión sobre el Circuito dos Afetos del filósofo brasileño Vladimir Safatle, en la que el miedo y la esperanza se constituyen como afectos que nos paralizan y nos impiden crear nuevas formas de vida. El desamparo podría constituirse como un afecto por movernos con la contingencia fuera de la temporalidad de la expectativa. La pandemia de la Covid-19 se toma como ejemplo para nuestras consideraciones en la dirección de presentar, en un primer borrador, tres conceptos para pensar/operar una educación matemática del desamparo: escala, pertenencia y frontera. Una educación matemática con Gaia entre humanos y no humanos en el devenir de los movimientos.

Palabras clave: educación matemática. impotencia. miedo. esperanza. antropoceno.

### Introduction

Brandan Reynolds, a South African Cartoonist, drew the following cartoon which gives us a possibility to talk about the Covid-19 in a different way. Not just from human perspectives in order to stay together, fight against this pandemic and continue to live our daily lives. Perhaps, this image helps us to doubt our way to produce our lives, our forms of life (Wittgenstein, 2009). The Covid-19 (just one example, maybe one that connect many nation-states and people around the globe) isn't the main problem, but just a symptom of our relationalities with human and non-human. If we go back to the beginning of the pandemic period, what it could be a kiss? What was this? Was it possible at the beginning of the pandemic period? Quarantine, for who? Fear that pushed us to go to the supermarket and buy all food that was possible? Hope in order to produce strong forces to fight against the virus? What more is possible to produce with and beyond Reynolds Cartoon?



**Figure 1:** The Kiss (<https://brandanreynolds.com/2020/03/06/business-day-friday-6-march-2020/>)

In our recent histories the human being deals with major complexities, that we can summarize: economic inequality; ecological collapse; digital control; mobility of human and non-human in global scale. All the four complexities are linked and connect with ethical, economic, political and cultural issues. Covid-19 is connected with this and it has been produced in the neoliberalism global economy, inside the one fragile dichotomy between nature and culture.

In our view, in the field of mathematics education research, the Covid-19 puts a challenge to produce another mathematics education. The ideas, concepts, tools and the arguments of a mathematics education of fear and hope, doesn't help to deal with this new complexity situation. The Covid-19 pandemic affects our forms of life, our mobility in our community, our organization in the idea of nation state. How is it possible to deal with something that we don't see? How is it possible to deal with a non-human agency that puts most of the countries in a situation completely new?

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The Social Turn (Lerman, 2000), Socio-political Turn (Valero, 2004; Gutiérrez, 2013) and Social-ecological Turn (Coles, 2022) offer important indications to consider other demands in the school environment, especially in math class as well as in math education research. But our discussions, we believe, are beyond that. Not in the way to indicate some political-economic-pedagogical strategies preceded before in the direction of one generalization. But, some invitations that disturb some scholar context in a singular way. The beyond isn't in the ideal direction. Although, nowadays (and maybe for a long time) we are not in a turn or in a crisis that we have the possibilities to improve or to deal with it. Humans and non-human live in a new geological epoch called Anthropocene and even if there is not an agreement among geologists regarding this new epoch, the emergence of this concept has had an important impact on humanities.

According to Latour (2017) we live in a world where energy expended from humans could be compared with the energy expenditure of volcanoes, or even with the impact of transformation made by plate tectonics. Anthropocene, i.e.,

*.../ this geohistorical period may become the most pertinent philosophical, religious, anthropological, and – as we shall soon see – political concept for beginning to turn away for good from the notions of “Modern” and “modernity.” .../ No postmodern philosopher, no anthropologist, no liberal theologian, no political thinker would have dared measure the influence of humans on the same scale as rivers, volcanos, erosion, and biochemistry. (Latour, 2017, position, 2862-2867)*

One implication to living in an Anthropocene epoch is that the idea of Mankind mastering nature is obsolete, even nonsense. Since we saw ourselves as a force of nature transforming it, humans can be seen as stones, volcanos, etc. So, the separation of nature and humans are no longer useful. Or, as Paul Valery, after the Second World War, said: “We civilized, we know now that we are mortals”. Another implication to think that the Anthropocene is a naive distinction between human science and natural science. For instance, how historians are going to deal with Covid-19 and the implications of this non-human agent when they will report the history of our present time? Is it possible to ignore this force when reconstructing this period in the future?

With this idea of Anthropocene, we think that is important to consider the Gaia concepts, because, maybe, it is telling us (humans) something: Despite of you (humans) I have my autoregulated movements; You (humans) won't live your lives in the same way; You (humans) don't have control of me; and also you (humans) are going to need to pay attention on what I'm saying in order to make your political decisions. But it is important to consider that Gaia is not the Globe, but it is a political agency. The human and non-human are with Gaia, not in Gaia. According to Latour (2017)

*Gaia is not a Sphere at all. Gaia occupies only a small membrane, hardly more than a few kilometers thick, the delicate envelope of the critical zones. Thus, it is not global in the sense that it would work as a system starting from a control booth occupied by some Supreme Distributor, surveying and dominating the whole. Gaia is not a cybernetic machine controlled by feedback loops but a series of historical events, each of which extends itself a little further – or not. Understanding the entanglements of the contradictory and conflictual connections is not a job that can be accomplished by leaping up to a higher “global” level to see them act like a single whole; one can only make their potential paths cross with as many instruments as possible in order to have a chance to detect the ways in which these agencies are connected among themselves. Once again, the global, the natural, and the universal operate like so many dangerous poisons that obscure the difficulty of putting in place the networks of equipment by means of which the consequences of action would become visible to all the agencies. (LATOURE, position 3316)*

Gaia has its actions, movements and affects with humans and non-human, in an independent way of humans. In this way, we (humans) need to learn

*.../ to become sensitive in turn to these multiple, controversial, mutually entangled loops. Those who are not capable of “detecting and responding rapidly to small changes” are doomed. And those who for whatever reason interrupt, eradicate, neglect, diminish, weaken, deny, obscure, discriminate against, or disconnect these loops are not merely insensitive or unreceptive. (LATOURE, Position 3332).*

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One way to be sensitive with Gaia, we believe, is to try to put in movement the temporality of helplessness's affect (in other ways and different of how fear and hope affect) in connection with these ideas of Gaia and the Anthropocene.

A predominant way to organize our political life is from affects of fear and hope. Fear about something bad that can happen with us and hope about something good waiting for us, at some point in the future. Fear and hope are both sides of the same coin and they are produced in a temporality of expectation, that is, we expect that at some point in the future something bad or good is going to happen. The problem is that this expectation puts our lives in a static attitude, incapable of producing some transformations or even thinking in a different way.

Then, in this particular picture about our contemporaneity, the Covid-19 Pandemic, that we produce and are produced at the same time, we tried in this paper to bring up an interesting discussion of the Brazilian philosopher Vladimir Safatle about Circuits of Affect. Our idea is to use these concepts, specifically, fear, hope and helplessness to produce a discussion in the field of Mathematics Education. We regard that this discussion could be done in other scholar fields.

The Covid-19 produces a big fear, because the virus is unfamiliar to the way that humans organize their life. On the one hand, it is possible to produce tools to solve, or even deal with it (put the population in lockdown; produce news medicines and, at least, produce news vaccines. It is important to detach that we agree with these strategies, based in knowledge and science, are important and necessary). These strategies operate in a way which the affects of fear and hope organize our action. In this way these actions do not put in doubt the capitalist system and also the Eurocentric values of life. In the end of this situation, humans will solve the problem and they will go back to their daily life. On the other hand, we propose a different discussion: the Covid-19 is a symptom of dominant strategies of contemporary capitalism (we would like to highlight that some research in mathematics education is produced in a way to maintain and reproduce the contemporary capitalism system). It is a symptom of our forms of life based on binaries that put our life in some boxes: human/non-human; culture/nature; mind/body, interior/exterior; male/female; and so on and so far.

Then, our argument is that the helplessness affect offers us an opportunity to deal with this symptom in a different way. Instead of just to dealing and solving the virus problem, we can try to deconstruct these binaries and produce different logics and narratives to organize our forms of life as well as our practice in math class and in the research field. A false problem is to think that if we know mathematics (ideas, content and procedures) we have conditions to deal in a better way with the problem. Most of the tendencies in math education try to create a more contextualized math with the aim to prepare the student to deal with real situations (problem solving, math modeling, technologies, etc.). But the point is that this contextualized math is a creation of school, it's not the world itself that is problematized, it is a simulation, a kind of model.

As we don't know about the global problems or crises that will appear in the world, each day more unpredictable, inside the complex relationality between human and non-human; as we don't know what knowledge will be necessary to the next generation regarding, for instance, ecological collapse, digital control, urban mobility, and so on and so forth, maybe is impossible, or even very difficult, to produce and predicate a mathematics education to this world. Then, a possibility is to think and to produce a way to deal with the contingent, the chance, the things that are impossible to predict, that we could not expect. From contingency, we could produce other forms of life, instead of trying to go back, to recreate an old and unsustainable form of life. In our field, specifically, produce mathematics educations others.

In this paper, we argue that classical mathematics education (with the fear and hope affects, most of time) produced in order to improve teaching and learning mathematics, concerned with mathematics for all, in a way to produce a meta-narrative to solve all the problems of the world is to avoid the real problem. Then, we propose a mathematics education of helplessness. Our political project in this paper assumes an institutional education with possibilities to discuss and problematize major complexities in our contemporary society, take an exemplary example: the Covid-19. Our exercise in the field of

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Mathematics Education is to bring a political discussion of Safatle (2015, 2017), in a way to produce other narratives, logics, temporalities and, with this, different forms of life. Not in direction of remembering the rhetorical narratives of modernity such as improvements, developments, but on the other hand: offer spaces, times and mattering for a mathematics education of helplessness; narratives that are incompatible to capture and control.

### **Circuits of affects: fear, hope, helplessness and political bodies**

The Enlightenment promise was that with the rise of Science, guided by a Reason that would act as a judge of last resort in deciding what is (or is not) true, we would reach a peaceful and egalitarian world where decisions for the sake of all would be taken from Science and Reason. A few centuries later, we see clearly that neither science has managed to guide humanity to an idealized situation and that neither science is guided by a Reason, with a capital "R".

This does not mean that the sciences should be left out, nor that classical logic, dialectical logic or paraconsistent logic don't play an important role in the different scientific rationalities of our contemporary society. However, we can see, more and more clearly, that the directions taken by different social groups, or forms of life, are not guided only by so-called rational or logical arguments. These directions have been taken from a certain rationality of circulation of affect. It may seem strange to bring the issue of affects into a scientific debate, given that in common sense, affections and feelings are opposites to Reason, and we must never base our decisions on them.

In the book "The circuits of affect: political bodies, helplessness and the end of the individual" the Brazilian philosopher Vladimir Safatle seeks to problematize how politics not only deals with the rules of circulation of goods, merchandise and people, but also determines the ways of circulation of affect. Safatle (2015) seeks to defend that far from a psychological irrationalism, it is possible to understand a rationality of circulation of affects.

Sum up the analysis of affections, initially, we could imagine that hope affect in a more interesting way politics, than fear, however, both have the same temporality of expectation that something (good or bad) happen in the near or distant future. Both hope and fear, in the Safatle perspective, would tend to create a certain immobility in the political field, because instead of being able to act creatively to solve problems assuming our contingency, we would tend to immobilize ourselves in the face of the expectation that something (good or bad) would happen. According to Safatle (2015)

Always the waiting time that takes us away from the potentiality proper from the moment. Perhaps, therefore, the political body that hope and fear are capable of producing is always the modality of a providential political body. The body constituted by the hopeful belief in a providence to come or the depressed and frightened body of a providence lost or never achieved (SAFATLE, 2015, p. 21)

If, on one hand, under the aegis of hope, we tend to act in a way that postpones our actions in the expectation that a force of support will come to solve our problems, on the other hand, fear puts us in a melancholy position of those who believe that the best of the worlds occurred in the past and that we missed this opportunity, leaving us with depressive paralysis as a form of inaction.

To offer another exemplary example in the field of Mathematics Teacher Education in Brazilian context, there is a belief that if we offer disciplinary knowledge for the prospective teacher, when he/she will arrive in the classroom (Secondary or High School), he/she will have the necessary instruments to deal with classroom demands. It is not surprising that we currently have many cases of sick and depressed teachers, with their bodies immobilized in the face of the challenges in the contemporary times. Fear also prevails in school institutions: fear of being reprimanded, of not fulfilling the projected curriculum, of not coping with the numerous problems that school education presents, of not surviving with salary of a teacher. But would it be possible to get out of this circuits of affect in which fear and hope constitute the bodies of teachers? If possible to deal with Covid-19 based on helplessness?

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In the political field, as an alternative to fear and hope, Safatle presents the effect of helplessness as a possibility to overcome the realities built. Safatle seeks the effect of helplessness in Sigmund Freud psychoanalysis, showing an ambivalence of this affect. If, on the one hand, helplessness is seen socially as something negative to be avoided, on the other hand, it is precisely the concealment of this affection, through narratives of demand for care that end up demeaning the other, which would be the problem to be addressed fought. Only helplessness could create new bodies that were not linked to covering up the absence of the Other.

The helplessness creates bonds not only through the transformation of all openness to the other in demands for protection. It also creates bonds by dispossession and by absorbing contingencies. To be helpless is to allow oneself to be open to an affect that disposes of the predicates that identify me. For this reason, affect that confronts me with an impotence that is, in fact, a way of expressing the collapse of powers that always produce the same acts, always the same agents (SAFATLE, 2015, p. 26).

Safatle seeks to show is the positivity of helplessness affect in deconstructing forms of life that make it impossible to create new ways of acting in the world, not by searching for an identity force that guides these actions, but, precisely, by a force of destitution of ourselves, allowing new forms of action in the world to be conveyed without fear or hope, that is, expectation of what kind of new identities may arise.

We believe that this affect (like all these discussions) can be moved in the fields of mathematics education, especially in our contemporaneity time. Helplessness offers us a possibility to get out of the prescription movement of mathematics education research (not all, but very frequently). Perhaps, operating from helplessness is an attempt to escape the idea that we should solve the problems in the world, which we take for granted that our forms of life are good and interesting and it has been improved over the years. There is no interior or exterior, human and non-human, nature and culture. These binaries do not make sense in the Anthropocene and just put the human being in a place of superiority to affect and control the world. If the Covid-19 is a symptom it could be a possibility not just to solve the problems of spread of virus, death of peoples, and so on. It is a possibility to put our forms of life in doubt and maybe we can produce, from helplessness, other worlds, other forms of life. Not forms of possible lives, but unimaginable. According to Safatle (2015)

when we open the doors of time with its uncontrolled and anomalous pulsations, its multiple forms of presence and existence, then we will once again be able to explode the limits of experience and do what until then appeared as impossible to become possible (SAFATLE, 2015, p.130).

### **In order to a Mathematics Education of Helplessness**

To think mathematics education of helplessness is to consider the urgency of creating new forms of life in order to overcome the destruction of earth caused by the capitalist mode of production. Is to problematize which kind of mathematics helps us to build these new forms of life. If we continuous to think about how to teach (mathematics) better - to improve learning, to do more contextualized math -, we are going to continuous to stay acting inside the paradigm of modernist enlightenment, which is, to believe that improvement of (modern) science will improve our forms of live, we are going to continuous acting based on duality nature/culture (human/non-human), believing that we humans are going to (in a closer or far time) master non-humans.

So, how to act in a different paradigm, in a different way? If we could escape from fear (of the end of times) and hope (to go back to normal life), we could find ourselves helpless and open to the urgency of the moment. At this point it is good to make a remark: we are not being naive here, supporting some discourses which are circulating, for instance, during the pandemy, which says that humanity is going to change, that capitalism is going to fall apart. We know that any possible change is not going to happen spontaneously by some sort of awareness from the invidious. Any kind of structural change only is going to happen if we make deliberate and collective decisions.

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Then, to be helpless, to act from the urgency of the moment, is to not expect a paternal figure, any kind of savior which would help us to go back to security, to a familiar environment. We are going to try to sketch these operating with tree concepts, in a first draft, which should be regarded as examples: scale, belonging and border. These concepts should not be seen as a new element to a new school curriculum. They are experimentations, some drafts, that we bring together, with our contingency, in this singular moment of our life. Our attempt is to provide some lines and outlines of these concepts not in order to fix one single characterization, but to provide an opportunity to produce other concepts of mathematics education of helplessness.

Normally, the concept of scale is featured as a constant ratio which allows a comparison. We could operate this concept like major or minor amplitude variations, a more precise picture of reality. A deployment of it, could be a political strategy to think globally and act locally as suggests Walter Mignolo's book. Still, a concept of scale from a mathematics education of helplessness should not be regard only as a way to deal of local or global problems, in order to search for precision or a comparison of amplitude, but also as a way to understand and unfold the implications of a chosen scale opens to a particular situation.

When we do a characterization of the concept of scale in such way, there is no possibility to determine a comparison ratio or a measurement unity as a political strategy to measure or denote a phenomena. It is not about build, test and calibrate a scale and then produce an effect, but instead, to do a composition with variations and readings of implications and possibilities that happens when we use such scale.

As we look to Covid-19 with such idea, it doesn't mean only to isolate people in their houses, control the flights between countries, realize massive testing and, in the last instance, make an economical race seeking the vaccine. Maybe, it means to put in check nation state scale, because it is constituted in the temporality of fear and hope. Covid-19 doesn't choose the nationality of who is going to be infected. How it would look like a concept of scale in this context? Number of infected? Number of deaths? How does this scale show which social relationship had been transformed? How does such scale deals with domestic violence, increased by mass social confinement?

Another concept from a mathematics education of helplessness could be the belonging. The idea of belonging to a country or to a cultural group is related to a bond with values, principles, believes which can traced in the traditions of such a group. The interactions between different groups has as a limit the identity process which maintain and differs these, principles, values and believes, its form of life. However, a concept of belonging could be built not by identity process but by relations in which identity is not build a priori. A concept of belonging could be build oriented by a politics of indifference, which means, as Safatle says that “/.../ politics un-identify the subjects from its cultural differences, it delocalizes themselves from their nationalities and geographical identities, in the same way that it de-individualize from their psychological attributes” (2015, p. 354).

How to think in a concept of belonging in order to deconstruct the idea of belonging to a nation state and to see our belonging to earth in a different way? How to think belonging understanding ourselves as humans and non-humans in Gaia, without the idea that we are humans for any country?

A third concept from mathematics education of helplessness could be border. Often, a characterization of this concept obeys a logic that your space ends where mine begins. In this way, an alleged identity self-arbitrate in which way and which place a border creates separations, hierarchization, and frequently exclusion. A concept of border in the logic of hope and fear makes impossible the circulation of people from different geo-spacial regions. For instance, in Brazil during 2020 in the pandemic times, border operate by one side with the rich people with high chances of survival and by the other the poor people with few or no chances of survival.

In a mathematics education of helplessness, a concept of border could be built beyond the idea of limit that distinguish inside from outside, interior from exterior. A border could be seen as a possibility. Not

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as a way to reinforce identitarian process build inside borders that constrains, like, for instance, infected and not infected humans.

Just to give an example, in almost every country which suffers with Covid-19 Pandemic there have been a repeated recommendation to people stay home. In Brazil, health professionals took a picture with the message: “We are here for you, stay home for us”.



**Figura 2:** Nós estamos aqui por você. Fique em casa por nós.

(<https://g1.globo.com/ba/bahia/noticia/2020/03/21/profissionais-da-saude-da-bahia-fazem-apelo-nas-redes-sociais-fique-em-casa-por-nos.ghtml>)

Such recommendation constitutes itself as a border, a limit to separate people and to try to put them in a less dangerous situation. It considers a priori that everyone has a house and that this house has the ideal conditions. So, this border is announced as a way to save us, it was built in the logic of fear, of the expectation of saving ourselves. However, this border ignores that lots of people around the world has not this ideal house or no house at all. What we want to highlight is that the recommendation ignores the real situation of most of people in so many countries. they can't stay home, or because they have no home, or because they have to go out to obtain the means to stay alive, to buy the daily bread. To be in the logic of helplessness is not to have pity of poor people, but to ask why I have the conditions to stay home, and there are lots of people who hasn't? How can I ask people to stay home, if we never take really serious as society that being homeless is a historical problem that we ignore or best we have said some words in its defense? If on one side the border as limit classifies, separates, excludes (and protects a few in Covid-19 times), on the other side, border as a possibility offers a form to affect and transform our forms of life.

These three concepts are interrelated and show us some line and outlines. They do not seek permanency, they are not basilar or unique. They serve as possibilities to create different concepts for others mathematics education of helplessness

And the day after of Covid-19? What will the mathematics teachers do? What research will be produced? The mathematics teacher (or math educators) go to their class and teach the same (universal) mathematics, in the same traditional way (or even in the new and more contextualized way of teaching), or will we really try to problematize how to deal with real life using different mathematics? If we just solve the problem, in the next year the Covid-19 won't be a so dangerous global problem, because we have some new vaccines. But we are going to lose a huge opportunity to produce mathematics educations others. When, we have nothing more to do than wait could also mean that all conditions to deep modifications are already present, know how to perceive them is sufficient. We don't need to restore the time of utopia, we need, in fact, to have a more complex view of the tensions and tendencies which are operating on the present (Safatle, 2015).

In this way, these complexity tensions and tendencies, most of time happen in a contingency and chaotic situation. For this, concepts of a mathematics education of helplessness could be interesting. Then, one possibility is to personalize the Covid-19 and find a way to “talk” to it in order to produce new forms of



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life, new schools, new strategies to deal with binaries (maybe overcomes it); try to produce other concepts for scale, belongings and boundaries. A mathematics education in becoming movements. As Ailton Krenak, an indigenous Brazilian, point out in his book “Ideas to postpone the end of the world”,

When we depersonalize the river, the mountain, when we take from them, their senses, considering it an exclusive attribute of humans, we liberate these places in order for them to become residues of industrial and extractive activities. From our divorce, from integration and interaction with our mother, the Earth, it turns out that she is leaving us orphans, not only those who in different degrees are called by Indian, indigenous or indigenous people, but everyone. I hope that these creative encounters that we are having the opportunity to maintain, encourage our practice, our action, and give us courage to move from an attitude of denial of life to commitment with life, in anywhere, overcoming our disabilities to extend the vision to places beyond those to which we are attached and where we live, as well as sociability ways and organization from which the large part of human community is excluded, which ultimately expand all the strength of the Earth to supply the demands of merchandise, security and consumption (Krenak, 24-25, 2019, our translation).

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